

Syllabus for Ecology Laboratory

BIOL 366, Fall 2009
UNCW

Introduction

Smith and Smith (2007) define ecology as “the scientific study of the relationship between organisms and their environment”. Activities in this ecology laboratory will introduce you to some of the laboratory, field, and analytical tools and techniques that ecologists use. You will learn to collect, analyze, interpret and communicate ecological data. Many of the field laboratory exercises will make use of sites on campus, including the remnants of the native Longleaf pine–wiregrass ecosystem that was once common in the southeastern United States. Later laboratories will include laboratory experiments and field trips to the HV-Evenwood UNCW property and Wrightsville Beach.

Course Objectives

Through your experiences in Bio366L you will have the opportunity to

- Develop your understanding of the principles of ecology and their applications;
- Learn a variety of field sampling and laboratory techniques;
- Collect, use and interpret data to evaluate ecological hypotheses;
- Develop your critical thinking, analytical, and quantitative skills;
- Communicate ecological knowledge in written form; and
- Become more effective, self-assessing, and self-directed learners.

What are your personal goals for this course?

- What do you want to know and be able to do by the end of this course?
- Do you feel prepared to achieve these goals?
- How will you attempt to achieve these goals?

Instructor Goals

Our goals as instructors are best stated by Ebert–May and Tsao (2007) as follows:

- As facilitators we will encourage and create a learning environment in which all students are actively engaged in the process of scientific thought and reasoning.
- We will guide your development toward higher-order thinking and reasoning skills so you can successfully explore and demonstrate achievement of each of the goals above.

Course Time and Location

Laboratories are scheduled for the following times:

Section	Day	Time	Teaching Assistants
200	M	02:00 pm-04:50 pm	Louis A. Muzyczek
201	T	02:00 pm-04:50 pm	Michael L. Echevarria
202	W	11:00 am-01:50 pm	Michael L. Echevarria
203	W	02:00 pm-04:50 pm	Joesph J. Facendola
204	R	02:00 pm-04:50 pm	Joesph J. Facendola

Contact Information

The teaching assistants will be your primary contact for this course and will be responsible for assessing your work. They can be reached as follows:

Louis A. Muzyczek **Michael L. Echevarria** **Joesph J. Facendola**
 Email: lam6441@uncw.edu Email: mle6491@uncw.edu Email: jjf2994@uncw.edu

The coordinating faculty member for BIOL 366 this semester is:

Dr. Borrett
 Office: Friday Hall 1057
 Office Phone: 910.962.2411
 Email*: borretts@uncw.edu
 Office Hours: by appointment

* I will respond to email as soon as possible, but please allow 24 hours for a response. If you require a faster response you may call my office phone. Also, *please include BIOL366 in the subject line of all email correspondence.* Failure to do so will result in substantially longer response times.

Materials and Readings

All reading and assignments for the course will be available through the course website at <http://people.uncw.edu/borretts/teaching.html>.

You will need to click on the tab titled BIOL366 for course materials for this class. You will need to print out the weakly laboratory instructions, data sheets, and questions and bring them to class with you. Showing up prepared is a key part of your course participation.

About the Course

Field trips Six field trips are scheduled (four on-campus; two off-campus). Because there are no adequate in-lab substitutions for these trips (aside from busy work!), we will go in all but the most severe weather. While most people dont like to work in the rain, that is part of doing field science and will be comfortable as long as you wear the appropriate clothes. Dress accordingly! Wear rain gear if it is forecast to rain (rain suits are best since umbrellas often do not work well in the field), wear warm or cool clothes as appropriate, always wear shoes appropriate for walking over rough terrain or in the woods, and wear long pants when we are sampling in the forest to reduce the chance of scratches and insect bites (repellent will be provided). *Please bring a notebook for data collection and/or note-taking on field trip days.* Although every effort will be made to return by

the official end of lab time on days with off-campus field trips, this cannot always be guaranteed and students should be prepared for a possible late return to campus on those two days.

Lab attendance and assignments Attendance is mandatory for all labs. If you miss one lab, ask your TA about attending another lab that week to complete the assignment. You will only be allowed to do this once during the semester. If you miss additional labs, you will lose the points for any assignment due for that lab. Since the beginning of lab is an important time for introducing lessons and describing field procedures, you will be considered to have missed the lab if you are more than 10 minutes late.

Students should bring a notebook, a copy of the lab readings, and a calculator to all in-house labs. Expect to spend the full laboratory period in lab (3 hrs) each week. Students who miss more than one lab without a valid excuse, or are disruptive in lab, or who rush through lab assignments to leave class early will be docked 5 points per incident from their total class points. Final grading decisions are made by the individual instructors, and you should consult your instructor if you have questions.

Schedule and Assignments

Schedule

Lab #	Week	Topic	Reading/Assignments
1	Jan 12–16	Scientific Method & Describing a Population	(Molles 2005)
2	Jan 19–24	Martin Luther King Jr. Holiday :: Library Laboratory	
3	Jan 26–30	Sampling Sedimentary Organisms	
4	Feb 2–6	Forest Ecology I: Hypothesis & sampling design	
5	Feb 9–13	Forest Ecology II: Sampling	
6	Feb 16–20	Data Analysis	Gotelli and Ellison
7	Feb 23–27	Indirect Measures of Population Size (HV-Evenwood)	
8	Mar 2–6	Env. Gradients and Ecological Communities 1	Draft Report Due
	Mar 9–13	spring break	
9	Mar 16–20	Env. Gradients and Ecological Communities 2	
10	Mar 23–27	EGEC 3: sample 3 & clean up	
11	Mar 30–Apr 3	Island Biogeography	
	Apr 6–10	Easter break	
12	Apr 13–17	Wetland Communities	Final Reports Due
13	Apr 20–24	Barrier Island Ecology (Wrightsville Beach)	
	Apr 27–May 1	No Labs	

Assessment

This course is built around four evaluation elements that are weighted as shown in Table 1. The first element is in class participation. The second element will be two in class unscheduled quizzes over the laboratory readings. These will be administered when you enter class and are designed to provide you with incentive to come to class prepared for the laboratories. The third element of the course is the reflection question sets that follow most of the laboratories. In most cases, these will be due at the end of the laboratory. The final element is a formal laboratory report that describes your forest field sampling. This report will be written in the form of a scientific manuscript to be submitted to the journal *Ecology*. This project is divided into a draft report and a final manuscript. The draft report provides your instructors the opportunity to provide you with feedback on both your scientific analysis and writing.

Table 1: BIOL 366 Evaluation

Course Component	Percent Contribution
Participation	10%
Pop Quizzes (2)	10%
Laboratory Question Sets (9)	40%
<i>Laboratory Report: Forest Laboratories (40%)</i>	
Draft Report	10%
Final Report	30%

Table 2 describes the grading scheme we will use for this course.

Table 2: Course Grading Scheme

% of Course Points	Grade
> 93	A
90–93	A-
88–89	B+
83–87	B
80–82	B-
78–79	C+
73–77	C
70–72	C-
68–69	D+
63–67	D
60–62	D-
< 60	F

Rubric

We will use the following rubric from Ebert-May and Tsao (2007) to evaluate your quizzes and lab question sets.

Scoring Rubric for Quizzes and Homework

Level of Achievement	General Approach	Comprehension
Exemplary	<ul style="list-style-type: none"> Addresses the question or problem States a relevant, justifiable answer. Presents arguments in a logical order. Uses acceptable style and grammar (no errors). 	<ul style="list-style-type: none"> Demonstrates an accurate and complete understanding of the question. Backs conclusions with data and warrants. Uses 2 or more ideas, examples and/or arguments that support the answer.
Adequate	<ul style="list-style-type: none"> Does not address the question explicitly, although does so tangentially. States a relevant and justifiable answer. Presents arguments in a logical order. Uses acceptable style and grammar (one error). 	<ul style="list-style-type: none"> Demonstrates accurate but only adequate understanding of question because does not back conclusions with warrants and data. Uses only one idea to support the answer. Less thorough than above.
Needs Improvement	<ul style="list-style-type: none"> Does not address the question. States no relevant answers. Indicates misconceptions. Is not clearly or logically organized. Fails to use acceptable style and grammar (two or more errors). 	<ul style="list-style-type: none"> Does not demonstrate accurate understanding of the question. Does not provide evidence to support their answer to the question.

University Policies of Concern

Disabilities

If you are a person with a disability and anticipate needing accommodations of any type for this course, you must first notify Disability Services (Westside Hall #1033, 962.7555), provide the necessary documentation of the disability, and arrange for the appropriate authorized accommodations. Once these accommodations are approved, please identify yourself to your instructor in order that we can implement these accommodations.

Violence and Harassment

UNCW practices a zero-tolerance policy for violence and harassment of any kind. For emergencies, contact UNCW CARE at 910.962.2273, Campus Police at 910.962.3184, or the Wilmington Police at 911. For University or community resources visit <http://www.uncw.edu/wrc/crisis.html>.

Academic Honor Code

The Department of Biology and Marine Biology and your instructors strongly support the Academic Honor Code as stated in the "Student Handbook and Code of Student Life," and we will not tolerate academic dishonesty of any type.