

Principles of Ecology (BIOL 370)
Spring 2009
Wall 317, MWF 11:30 - 12:20 PM

Instructor: Dr. John Hutchens

Office: SCI 126B

Phone: 349-2169

E-mail: jjhutch@coastal.edu

Office Hours: MWF 9:00 AM – 11:00 AM, T 10:00 AM – 12 noon, by appt, or just stop by

Course web page: <http://ww2.coastal.edu/jjhutch/bio370.htm>

Prerequisite: BIOL 122 or MSCI 302. **Co-requisite:** BIOL 370L

Required text: Molles, M.C. 2008. Ecology: Concepts and Applications. 4th Edition.
McGraw Hill.

Objectives: BIOL 370 is a core course for biology majors. My objective is to provide you with a comprehensive introduction to the science of ecology. Ecology is a diverse field that studies how organisms interact with their environment at many levels (from individuals to landscapes). Consequently, we will cover a wide range of topics that will allow you to understand and appreciate how ecologists see the world and what kinds of questions they ask.

Student Learning Outcomes: Students who successfully complete this course will be able to:

1. Describe key ecological topics across a range of hierarchical scales.
2. Describe how organisms respond physiologically to differences in the abiotic environment.
3. Describe how organisms interact behaviorally with other organisms.
4. Describe potential genetic problems of small populations.
5. Describe both in words and in equations how populations change in size and compete.
6. Describe how populations interact through competition and predation.
7. Describe how community structure is measured, and what factors influence community structure.
8. Describe how communities change through time and how disturbances influence this change.
9. Describe how ecosystems are studied from a structural and functional perspective.
10. Appreciate how ecological experiments are conducted.
11. Practice how to synthesize primary literature in the field of ecology.

Grading: Your grade is based on four homework assignments, four lecture exams, a cumulative final exam, and a writing assignment. Homework assignments will require answering a few questions based on short readings or ecological topics in the news. Exams will consist of a mix of multiple choice, fill-in-the-blank, and short answer questions. Exams will cover material from both lecture notes and the book, and include both factual and analytical types of questions. Analytical questions will require you to apply your ecological knowledge as well as interpret data. The writing assignment will consist of an extended abstract (no more than 2 p, 500 words) of two related papers. Late papers will be penalized by 10% for each school day they are late.

Point Distribution:

Assignment	Points
Homework	100
Writing	100
Exam 1	100
Exam 2	100
Exam 3	100
Exam 4	100
Final Exam	100
Total	700

Grading scale:

Grade	%	Earned Points
A	90-100	627-700
B+	87-89	606-626
B	80-86	557-605
C+	77-79	536-556
C	70-76	487-535
D+	67-69	466-486
D	60-66	417-465
F	0-59	0-416

Cheating on exams and plagiarism on the writing assignment will not be tolerated, and a grade of F will be earned for the assignment.

Attendance: Attending lecture is not mandatory, but it is the key to doing well in this class. Attendance is mandatory for exams—make-up exams only are given for university-excused absences (see the CCU 2008/2009 Catalog, pp. 47 for details). If you know you are going to be absent for an exam, you must contact me *as soon as possible* in order to schedule a make-up. I will be taking attendance daily to comply with federal financial aid regulations.

Learning disabilities: Students with learning disabilities should see me at the beginning of the semester so special arrangements can be made, if necessary, for your success in this course.

Reminder: Turn OFF your cell phones before class!

Caveat: This syllabus is subject to change at the instructor's discretion.

Tips for success:

- 1) Come to class. Come to class. Come to class.
- 2) Take good notes.
- 3) Ask questions. Question everything. Ask questions.
- 4) Read your text carefully, especially the material I cover in class.
- 5) Study for more time than you think you need to study, and make sure it's quality time.
- 6) Study with others in class.
- 7) Rewrite your notes with what you've learned from asking questions and reading the text.
- 8) Get some sleep before exams.
- 9) Have a good attitude.
- 10) Come to class.

Schedule: This schedule is tentative and subject to change.

Week	Dates	Topic	Chapter Readings
1	Jan 14 & 16	Introduction to ecology	1: pp. 2-3; 4
Individuals and the environment			
2	<i>Jan 19: MLK Day</i> ; Jan 21; Jan 23: Homework 1 due	Temperature relations	4
3	Jan 26 - 30;	Water relations	5
4	Feb 2 - 6 Exam 1-Feb 6	Energy relations and nutrients	6
5	Feb 9; Feb 11: Homework 2 due ; <i>Feb 13: C of I</i>	Social relations	7; 8
Populations and the environment			
6	Feb 16 - 20	Population genetics and natural selection; Population distribution and abundance	8; 9
7	Feb 23 - 27 Exam 2-Feb 27	Population distribution and abundance; Population dynamics	9; 10
8	Mar 2 - 6	Population growth; Life history; Competition	11; 12; 13
9	Mar 9 - 13; Mar 13- Homework 3 due	Competition; Exploitation	13; 14
	<i>Mar 16 - 20</i>	<i>Spring Break</i>	
Communities and the environment			
10	Mar 23 - 27; Exam 3- Mar 27	Species abundance and diversity	16
11	Mar 30 – Apr 3; Mar 30: Last day to W; Apr 3-Extended abstract due date 1	Species interactions and community structure	17
Ecosystems and large spatial scales			
12	Apr 6 & 8; Apr 8- Homework 4 due ; <i>Apr 10: Holiday</i>	Primary production and energy flow	18
13	Apr 13 - 17; Apr 17- Extended abstract due date 2	Nutrient cycling and retention	19
14	Apr 20 – 24 Exam 4-Apr 24	Succession and stability	20
15	Apr 27 – May 1 May 1: Revised abstracts due	Geographic ecology	22
	May 8, Fri, 11AM	Cumulative Final Exam	