

General Ecology
BIOL 341 (Sections 02 and 03)
Spring 2019

Instructor

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Meeting Time and Place

Lecture: MWF 09:00 - 09:50 am, RITA 154

Laboratory: W 2:00 – 5:00 pm for section 2 and M 2:15 – 5:15 pm for section 3 (RITA 241).

Classroom Communications

We will use OAKS for assignments, schedules, announcements, etc. Pdf copies of lectures will be posted after they are given. Students are expected to frequently check the course OAKS site. All assignments must be submitted on OAKS' Dropbox, and should not be emailed to the instructor, unless otherwise stated.

Note: This syllabus is subject to change. Please check OAKS for the most recent version.

Course Details

Course Description

Ecology is the scientific study of interactions among organisms and with their environment. It examines questions at various scales from population to community to ecosystem. This course will introduce you to the fundamental concepts and models in the field of ecology, through lecture, reading, discussion and problem-solving activities. There will also be a strong emphasis on understanding the process of science through reading and critical evaluation of the primary scientific literature as well as conducting a field ecology project. Students will be tested on their understanding of the meaning and applications of different concepts through quizzes and exams.

Prerequisites

BIOL 111, BIOL 111L, BIOL 112, BIOL 112L, BIOL 211, BIOL 211D

Co- or pre-requisite

BIOL 305, MATH250

Learning Objectives

Students will be able to:

1. Develop a strong understanding of the fundamental concepts and principles in ecology;
2. Understand how biological and physical factors influence ecological systems and the distribution of biodiversity on Earth;
3. Recognize the major ecological patterns in nature and the factors that cause them;

4. Apply models to understand population and community growth and change;
5. Distinguish the many approaches scientists use to studying ecology;
6. Engage in critical thinking and discussion of primary scientific literature in ecology;
7. Document ecological patterns through field observations;
8. Make informed predictions about how different organisms will respond to environmental conditions and biotic interactions;
9. Apply scientific process to ecological questions;
10. Explain the relationships between ecology and society.

Course structure

This course involves two critical components:

Lecture: will introduce students to key concepts in ecology and case studies of research testing these concepts.

Laboratory: will allow students to document and assess ecological patterns, and develop several practical skills used in ecology, through field trips and a research project.

Materials

Required textbook – Ecology: The Economy of Nature 8th edition by Relyea and Ricklefs. Other required readings will also be available as pdf files placed on OAKS.

Optional textbooks – How to Do Ecology: A Concise Handbook 2nd edition by Karban, Huntzinger and Pearse. Ebook version available on CofC library.

Each student is required to have a field notebook to take notes during fieldtrips and when conducting the research project. It should be a sturdy notebook that can stand up to the elements.

All assignments will be required to be completed on a word processor or other necessary software (e.g. Excel, PowerPoint, R). All the software needed for this class can be accessed in the College of Charleston computer labs throughout campus. If you do not know how to use any of the applications that is required for the class, you should arrange tutoring with the instructor.

Key dates

Last day of drop/add: Jan 14, to drop with Grade of “W”: Mar 25.

Mid-term exams: Feb 4, Mar 4, Apr 1

Final Exam: Monday April 29, 8:00 - 11:00 am

Grading

Your grades will be based on the following scheme:

Assessment	Possible points
Lecture:	
- Three mid-term Exams	240
- Cumulative final exam	150
- Discussion of literature and participation in hands-on activities	100
Laboratory:	
- Field trip notebook and reports	160
- Research project	190
Total	840

Letter grade percentage points:
A: 93-100%
A-: 90-92.9%
B+: 87-89.9%
B: 83-86.9%
B-: 80-82.9%
C+: 77-79.9%
C: 73-76.9%
C-: 70-72.9%
D+: 67-69.9%
D: 63-66.9%
D-: 60-62.9%
F: <60

Course Work Details

Lecture Exams

We will have three mid-term exams and a final cumulative exam. Topics covered in the lecture period and in the assigned readings will be fair game for exams. Format will be mixed and may include: multiple choice, matching, fill-in, and short answer. Exams will focus on reasoning, problem solving, interpreting graphs and understanding concepts. Students will submit questions for possible use on the exams. To prepare for the exam, students may do the online quizzes, administered on OAKS. These will help you stay on top of the lecture and reading and will be in the same format as some of the exam questions.

Discussion of primary literature

The purpose of the journal article discussions is to get students reading primary scientific literature, to expose students to a breadth of subjects, and to let students enhance their reading, presentation and critical evaluation skills. Over the course of the semester, students will read and discuss several articles during part of the lecture sessions; a team of 2 students will lead each article discussion. Grades will be based on attendance, active participation, intellectual engagement and completion of discussion assignments submitted at the beginning of class. Discussion of primary literature will be held during lecture class sessions.

Hands-on activities

Throughout the semester, students will do several hands-on activities during lecture class sessions to engage more with the course materials and apply what they have learned.

Field trip journal and report

We will visit several ecosystems during the course of the semester to observe ecological systems, practice commonly used field techniques, and apply an understanding of ecological concepts. A team of 2 students will work with the TA in organizing each trip. Each student is expected to keep, in the field notebook, a detailed account of their observations, sketches and other records during the field trips. Students will be required to turn in this field notebook for credit toward their final grades. This consists of handwritten notes. You must bring your notebook on all trips.

After each fieldtrip, students will write a field report of 600-800 words with the following:

- a detailed summary of the field trip using the field notes and other information (locations, activities, species observed etc.); this can be accompanied with photographs.
- a discussion, supported with peer-reviewed literature, of an ecological process encountered during the trip (such as species interaction, succession, zonation etc.) or life history of a specific animal/plant.

The report must be accompanied by a complete citation of the peer-reviewed literature, and is due a week after each trip.

Research Project

Each student (or teams of 2-3 students) will carry out and complete an original research project. Students will experience the process of generating and implementing an ecological research project, and then present scientific information in the form of a scientific manuscript and an oral presentation. A short proposal describing the goal and methodology of the project is due mid-semester and the student/team **MUST** discuss the plan with the instructor before carrying out the project, otherwise no credit will be given for the work. Students will also practice peer review and constructive criticism of writing, data analysis, interpretations and conclusions (more details

provided later).

Extra credit

Students can earn up to 25 points total in extra credit, either by doing the optional quizzes or by presenting the results of a recent research related to ecology featured in recent popular science news article (details later).

Course Policies

Attendance

Attendance and participation will contribute to your grade. You are expected to attend every lecture; you will learn more by attending and participating in lectures. Attendance of all activities pertaining to the laboratory section is **required** and **mandatory**. Participation on both independent and group aspects will count toward your grade. Although group activities are assessed at the group level, non-participation will influence the student's individual grade.

If extreme circumstances necessitate an absence, you are responsible for obtaining the materials and information covered and referred in class during your absences. *Online lecture notes are a supplement, not a substitute for attending lectures*. If you know you will be missing a class, it is your responsibility to inform and make arrangements with the instructor in advance.

Make-up or early exams will only be given if you speak with the instructor at least 2 weeks prior to the exam with a valid reason. Make-up for article discussions and fieldtrips are not possible.

Honor Code and Academic Honesty

All students are expected to follow the College of Charleston's Honor Code and Academic Honesty. Lying, cheating, attempted cheating, and plagiarism are in violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved.

While peer-collaboration and exchange of ideas is highly encouraged in this course, all written projects and assignments submitted for a grade must be strictly individual and your own, unless they are part of a collaborative project with multiple authors. Students should be aware that unauthorized collaboration – working together without permission – is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted.

Other forms of cheating include possessing or using an unauthorized study aid (which could include accessing information via a cell phone or computer), copying from others' exams, fabricating data, and giving unauthorized assistance. Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class, even if the work is revised.

Students can find the complete Honor Code and all related processes in the Student Handbook at <http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php>.

Disability Accommodation

The College abides by section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act that stipulates no student shall be denied access to an education “solely by reason of a handicap.” Disabilities covered by law include, but are not limited to, learning

disabilities and hearing, sight or mobility impairments. If you have a documented disability that may have some impact on your work in this class and for which you may require accommodations, please see an administrator at the Center of Disability Services, Lightsey Center suite 104, 843.953.1431 and the instructor so that such accommodation can be arranged. If there is a student in this class who has a documented disability and has been approved to receive accommodations through SNAP Services, please set up an appointment to discuss accommodations with the instructor.

Late Work

All assigned work must be turned in by the assigned due time on the respective due date. Work submitted past this time (even on the due date) will have **5%** of the total available points deducted for that day and for each subsequent calendar day, including weekend and holiday days, except in extremely unusual circumstances (advance arrangement required). Zero points will be allocated for an assignment if it is not turned in before the assignment is passed back, discussed in class or key posted.

Classroom and Fieldtrip Code of Conduct

You are expected to be engaged with the class, demonstrate respect for the course instructor and your peers, to be on time and present for the entire duration of each session. You can use electronic devices to take notes (although, taking notes by hand is highly recommended), but you should refrain from texting, using social medias, watching videos or doing anything else that would distract you and your classmates from learning. No such devices may be used during exams. For the fieldtrip, Please dress for the weather and wear closed shoes on field trips.

Email communications

I will respond to legitimate email inquiries from students within 24hours during business hours. Make sure you consult the course syllabus and any information on OAKS for answers BEFORE submitting inquiries by email. Email should NOT be seen as an alternative to meeting with the instructor (or the TA) during office hours. Each email message must include in the Subject line the course identifier and a concise and clear statement of purpose [e.g., BIOL 211: I have a conflict with next test].

Getting help outside of class

Students are encouraged to meet with the instructor and/or the TA to ask questions. I am always willing to take time to help you better understand the materials. In addition, the Center for Student Learning (<http://csl.cofc.edu/>) offers a variety of helpful resources, including study strategies, workshops and tutoring.
