

## I. Course Information

Course Number:	PCB 4043C
Course Name:	General Ecology
Credit ho'e:	Tuesday and Thursday, periods 3 and 4 (9:35 to 10:50)
Lab:	4 hours, 1 day per week, either morning or afternoon
Location:	will be announced on the E-learning website
Course fees:	\$46.00

## II. Required Materials

Textbook:	Ricklefs, R.E., <i>The Economy of Nature, 6th edition</i> . 2008. WH Freeman and Co. (ISBN 9780716738831)
Lab manual	available on class E-learning site
Statistics manual	available on class E-learning site
Other readings	Papers from the primary literature will supplement lecture materials. These will be posted on the class E-learning site.
Recommended	Supplementary readings from the literature will be posted on the E-learning site.

## III. Catalog Description

Ecological processes and organization in terrestrial and aquatic habitats. Laboratory and field exercises emphasize techniques of ecological analysis. (B)

## IV. Pre-requisites and Co-requisites

BSC 2011, 2011L or equivalent, with minimum grades of C.

You need not be majoring in one of the biological sciences to succeed in the course, but you must have training in biology for rapid progress through the course. Thus, college-level biology is a prerequisite. If you are in doubt about your readiness for this course, please come and see an instructor during the first two weeks. To learn more about the practice of ecology as a scientific discipline, visit the Ecological Society of America web site.

## V. Instructors

This course is co-taught by two of the following faculty:

*Dr. Michelle C. Mack*, Department of Biology, 511A Bartram Hall  
*Dr. Craig W. Osenberg*, Department of Biology, 627 Bartram Hall  
*Dr. Ted Schuur*, Department of Biology, 418 Carr Hall

## VI. Course Website

A complete set of course materials and related information is available on the E-learning (Sakai) website. Students are responsible for all announcements made in class and/or posted on the course website.

## VII. Course Design and Objectives

We will study the basic principles of ecology, emphasizing population, community and ecosystem ecology. We will rely on a variety of approaches to learn about ecology and the way ecologists study natural systems. Lecture will emphasize general principles and models that underlie this theory. Specific case studies will be drawn from real-world examples taken from the scientific literature. The laboratory will offer students hands-on opportunities to examine natural systems, and to collect, analyze and interpret data. Students will also conduct independent research projects. Oral presentations and written reports will further help develop students' communication skills. By the end of the term, students should:

- understand the conceptual foundations of ecology;
- be able to apply quantitative tools (simple mathematical models, statistics, computer simulations) to ecological problems;
- be able to conduct independent research;
- be able to engage in intelligent discussions, and make informed decisions, about ecological and environmental issues;
- be prepared to pursue advanced study in ecology (e.g., at the graduate level), if they choose.

## VIII. Course Overview and Schedule

Lecture topics for this course are listed below. A more detailed schedule with assigned readings is available at the E-learning site. The E-learning site also provides the laboratory schedule; there are no labs held the first week of class.

<i>Week</i>	<i>Lecture Topic</i>
1	Introduction to Ecology and the scientific method; Using observations, experiments and models to understand ecological patterns and processes
2	Earth's climate and soils: global patterns and local processes; Biomes
3	Primary productivity and energy flow through ecosystems; Ecosystem carbon cycling
4	Exam 1; Climate change and the carbon-climate connection
5	Human effects on the global biogeochemical cycle of carbon; Nutrient cycles
6	The changing global biogeochemical cycle of nitrogen; Energy flow from ecosystems to individuals
7	Physiological ecology: optimization, acclimation and adaptation; Life history
8	Exam 2; Population ecology: distribution
9	Population ecology: demography, population growth, and application to sea turtles
10	Population ecology: intraspecific competition, density dependence, regulation, equilibria, and application to amphibian declines
11	Population ecology: fisheries; Exam 3
12	Community ecology: species interactions, predator-prey, pest control, and disease dynamics
13	Community ecology: foodwebs, indirect effects and trophic cascades, higher order interactions
14	Community ecology: patch dynamics, disturbance, and island patterns
15	Community ecology: biodiversity and ecosystems; Exam 4

## IX. Expectations and Philosophy

*Commitment to excellence:* As in most areas of biology, the amount of subject matter in the field of ecology has exploded in recent years. Moreover, the stakes of your learning are immeasurably higher given the current rate at which we are changing our planet. Our foremost concern is to provide you with a solid review of the subject matter, while allowing you the opportunity to explore and discuss ecological issues as they apply to our rapidly changing biosphere.

*Our Responsibilities:* We (the instructor and teaching assistants) will endeavor to help you succeed in accomplishing the above objectives. We will do our best to address your concerns and questions regarding the course materials, policies, and grading. You are encouraged to ask questions during the lectures. You are also welcome to walk in during the office hours, make an appointment, or contact us via e-mail.

*Your Responsibilities:* Your thoughtful participation and scholarship are essential to the success of this course. A significant portion of lecture and laboratory time will be devoted to open discussion and exchange of ideas. To facilitate this, you are expected to:

- Read and follow the instructions, guidelines and schedules in this syllabus and posted on the course E-learning web site.
- View material on web page for lecture notes.
- Hand in your answer to the assignments.
- Follow the UF honor code (see below).
- Read the appropriate sections of your textbook, additional readings, and the lab manual before class. This is essential for you to do well in the homework assignments and lab quizzes.
- Attend lectures and labs and let us know in advance if you are going to miss a lab for an appropriate reason.
- Please arrive at the meeting place for each lab on time. Field trips will depart on time. Otherwise, you will miss the lab quizzes. If you are late and miss the field trip, you may miss the entire points for the lab report for that trip.

## X. Assessments and Grading

### A. Suggestions

It is very unlikely that you will be able to earn a passing grade in this course without attending the lectures and labs. Your success in this course depends critically on keeping up with the readings and lecture materials. The best way to earn an "A" is to attend lecture and lab, listen critically, and read assignments in a timely manner as the course progresses. Last-minute cramming for exams is not a successful strategy. Synthesis and construction of linkages among concepts requires time and familiarity with the material. Note that the class assignments and the laboratory quizzes will be exceedingly easy and straightforward if you read the material in advance. Make-up exams will be allowed only in extreme cases and only if there is well-documented absence due to acute illness, jury duty, and other circumstances that are clearly beyond your control.

Teaching is an effective way of learning (just ask your instructors). We therefore encourage you to work in groups, explain concepts to one another (i.e., teach), and ask each other questions. Study for exams by going over old exams – take them first before referring to the keys. It's "easy" to think you know an answer if you look at the answer. Challenge yourself to think through the problem and construct the answer yourself. Explain your reasoning to your study group; listen to other ways of solving the problem. Think.

**B. Grading:**

*Exams:* There will be four "midterm" exams, but no "final" exam. The midterm exams will be administered during normal class meeting times. The exams will each cover material presented in lecture, from the assigned reading in the textbook, and from the homework. That said, exams will emphasize lecture content. Your text is a general reference to guide you that will provide additional background and clarification. Exams will not be cumulative, but instead will emphasize the recent topics covered in class.

Exam format will change throughout the semester, consisting of multiple-choice questions, problems requiring short answers, and other problems requiring more reasoned explanations for your answers (examples of these exams will be available on the E learning site).

Exams and answer sheets will be provided, but students must bring #2 pencils to each exam. Each student must bring her/his Gator ID to class on exam days. No student will be allowed to start an exam after the first student to complete an exam leaves the classroom. All exams and answer sheets will be collected at the end of the exam period. Late arriving students will not be given additional time to complete an exam. Exams will be available for review during a subsequent lecture section and during office hours.

*Regrades:* If you feel that we have graded your exam incorrectly, you may submit a written request for a regrade. Deadlines for requests are 1 week after return of the exam to you. Your request must be submitted 1) by the posted deadline to the instructor who wrote the exam; 2) with a typed cover letter detailing why you think you should receive additional credit; and 3) with the original copy of the exam. Your entire exam will be regraded. We will not entertain requests for 1-2 points. We are primarily concerned with correcting fundamental oversights, not minor and debatable issues. Of course, we'll be happy to discuss any aspect of the exam with you during our office hours. The goal is to have you master the material and understand the concepts.

Corrections of math or clerical errors (e.g., we added up your points incorrectly) can be made using the same procedure as above, although the exam will not be regraded.

Please note: We xerox a subsample of the exams. Any alteration of your answer (e.g., writing in a new answer into a previously blank field or erasing an incorrect answer and replacing it with the correct answer) will result in a failing grade for the course and referral to the Dean for Student Affairs.

*Make-up Exams:* Exam absences must be documented in advance of the exam day, with the exception of emergencies that can be documented thereafter. No make-up exams will be given without prior permission or documentation of illness. In case of illness, a letter from the student's primary care provider is required. This letter must state that the student was unable to complete the exam on the scheduled date (i.e., a letter stating only that the student was seen in a clinic is not sufficient). A personal matter requires a note from the Dean of Students (P202 Peabody Hall). After proper documentation is submitted, the student will receive a make-up exam (the format will be of the instructor's choosing, including essays).

*Online Exercises/Homework:* Short assignments that address the lecture material will be posted on the E learning site. On line assignments will be announced in lecture when they are posted and also announced at the E learning site, and it is your responsibility to keep up with these announcements and the due dates. The questions will require thought, but they will be straightforward and easy to answer if you keep up with your reading and attend the lectures. Assignments are due in class at the beginning of lecture; you cannot turn one in for credit at the end of the lecture period.

*Extra Credit Questions:* In addition to these graded assignments, there may also be in-class extra credit opportunities at the discretion of the instructor. These can only be turned in during the class when they are assigned, unless notified otherwise. There are no make-up or late extra credit opportunities. The value of the extra credit will not be determined until the end of class. The extra credit points are relatively small and are not likely to change your overall letter grade, unless you are on the very edge of the next letter grade.

*Laboratory:* The laboratory section is graded separately by the teaching assistants, but the points are part of the overall course grade. Laboratory points come from a variety of in-class quizzes, short assignments, and lab reports. Please look at the separate lab schedule to see assignments and points; these will be discussed in more detail during your first lab section. Lab sections do not meet the first week of class.

*Late reports:* Late reports will be discounted 20% of the maximum possible points per day (except in the case of a family emergency or serious health problem).

*Grade calculations:*

4 Exams	= 50% (12.5% each)
Lecture Homework	= 10% (5% for each half of the semester)
<u>Laboratory</u>	= 40% (refer to the E-learning web site for a detailed breakdown)
Total	= 100%

Final scores will not be rounded (i.e., 89.92% is not 90%). Your grade will be based on your performance relative to the mean total score of the three highest undergraduate scores in the class (this mean is designated as "X"):

A:	>93% of X
A-:	>90% of X
B+:	>87% of X
B:	>83% of X
B-:	>80% of X
C+:	>77% of X
C:	>73% of X
C-:	>70% of X
D+:	>67% of X
D:	>60% of X
D-:	>57% of X
E:	<57% of X

### C. Special Treatment

Please do not request individual special treatment regarding grading at the end of the semester; we do not adjust grades for individuals. Plan to do well on all exams and other assessments from the beginning of the semester. If you have ongoing challenges with the material or stemming from health issues, please see the instructor as soon as possible, so that we can help you.

## XI. Email Communication

All email correspondence to course instructors must be sent from within the E learning site using the Mail function. Correspondence regarding the lecture, homework and the overall course should be directed to the professors. Specific questions about the laboratory can be directed to teaching assistants. Please tick the option to send a copy of the email message to the recipients' UFL email accounts.

## XII. Attendance

Students are expected to attend all classes and are responsible for all material covered during the lecture. Students are strongly encouraged to read the assigned chapters before coming to class as this will make it easier to comprehend the lecture material. If you miss class, visit the course website for any lecture

slides/notes and course announcements. There is no make up for in-class activities, even for excused absences.

### XIII. Time Commitment

The UF College of Liberal Arts and Sciences assumes that each student will devote 3-4 hours per week per credit-hour to each course, including time in lectures and labs. Because PCB4043C is 4 credits, each student should therefore expect to devote 12-16 hours per week to this course. A recommended time minimum time allocation is below.

Activity	Hours per Week
Lecture Period	3
Lecture Homework	1
Textbook Readings	2
Lab Period	4
Lab Assignment	3

If you find yourself spending more than 16 hours per week on average on these activities, discuss this with your instructor to see if you can refine your study habits. If you find yourself spending less than 10 hours per week on average, you should recognize that you may have difficulty learning and comprehending the material in this time, and this will probably be reflected in poor performance on the various assessments, causing you to receive a lower overall course grade. Please also recognize that some weeks will require more work and some less than the overall average.

### XIV. Conduct in Class

Please be courteous and do not talk during lecture, unless during a discussion period. This can be distracting to other students and the instructor.

Only approved electronic devices may be used in class when used to take notes or otherwise participate in classroom activities. Unapproved electronic devices include video recorders, digital cameras and MP3 players. Students who use unapproved devices in class will be considered disruptive. Multiple disruptions will be considered grounds for the assignment of a failing grade. Please discuss with the instructor in advance if you think have a legitimate use for an electronic device not mentioned here.

### XV. Academic Honesty and the Honor Code

We expect all students to adhere to the University of Florida Honor Code. Those who do not will be brought before the Student Honor Court. Please note that cases of cheating and plagiarism in this class have resulted in grade reductions and the placement of letters in the students' permanent file, if not suspension or expulsion from the University.

The UF Honor Code (see: <http://www.dso.ufl.edu/sccr/honorcode.php> )

*Preamble:* In adopting this Honor Code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the University community. Students who enroll at the University commit to holding themselves and their peers to the high standard of honor required by the Honor Code. Any individual who becomes aware of a violation of the Honor Code is bound by honor to take corrective action. A student-run Honor Court and faculty support are crucial to the success of the

Honor Code. The quality of a University of Florida education is dependent upon the community acceptance and enforcement of the Honor Code.

*The Honor Code:* We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied:

***"On my honor, I have neither given nor received unauthorized aid in doing this assignment."***

In addition to this general statement of honor, the University has defined the following offenses as Academic Honesty Violations: Cheating, plagiarism, bribery, misrepresentation, conspiracy, and fabrication. They have further defined the following terms:

*Cheating:* The improper taking or tendering of any information or material which shall be used to determine academic credit. Taking of information includes, but is not limited to, copying graded homework assignments from another students; working together with another individual on a take-home test or homework when not specifically permitted by the teacher, ... Tendering of information includes, but is not limited to, giving your work to another student to be used or copied ...

*Plagiarism:* The attempt to represent the work of another as the product of one's own thought, whether the work is published or unpublished, or simply the work of a fellow student. Plagiarism includes, but is not limited to, quoting oral or written materials without citation on an exam, term paper, homework, ...

*Misrepresentation:* Any act or omission with intent to deceive a teacher for academic advantage ...

**We encourage students to work together and to help one another master the material.** You can collect data together, help each other in the field, discuss ideas, practice presentations in front of one another, make up practice exams, critique drafts of each other's reports, etc. Despite this "group learning", the final product that you turn in for grading must reflect your own work. Any contribution from another individual must be credited (e.g., include an acknowledgement section that says "I thank Joe Y and Susan X. for their helpful comments on a previous draft, and George for providing insights about differential equations.").

No discussion is permitted during exams; nor should any student discuss an exam given in class with a student who is taking a make-up (and has not yet taken an exam).

If you witness any instances of academic dishonesty in this class, please notify the instructor. For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: <http://www.dso.ufl.edu/studenthandbook/studentrights.php#academichonestyguidelines>

## **XVI. Accommodations for Students with Disabilities**

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources. Please see the University of Florida Disability Resources website for more information at <http://www.dso.ufl.edu/drc/>. Note that the student should provide documentation of a requirement for accommodation to the instructor **by the second week of classes**. No accommodations are available to students who lack this documentation. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. It is the student's responsibility to obtain this documentation, provide it to the instructors, and speak with the instructor a week prior to *each* exam.

### **XVII. UF Counseling Services**

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. Please look here for a more complete description of UF counseling services:  
<http://www.dso.ufl.edu/supportservices/campuscounseling.php>

### **XVIII. Software Use**

All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.