

### I. Course Information

|                       |   |
|-----------------------|---|
| Course Number:        | PCB 4043C   |
| Course Name:          | General Ecology   |
| Credit hours:         | 4   |
| Lecture time:         | Tuesday and Thursday, periods 3 and 4 (9:35 to 10:50)                                   |
| Lecture office hours: | Tues & Thurs, 10:50 - 11:30, in lecture hall. Or contact instructor for an appointment. |
| Lab time:             | 4 periods, 1 day per week; times are posted on the course website                       |
| Location:             | Announced on the course E-learning (Canvas) website                                     |
| Course fees:          | \$46.00   |

***Details of the Syllabus are subject to change. Any changes will be announced in class and on the course website.***

### II. Required Materials

|                     |  |
|---------------------|--|
| Textbook            | Ricklefs and Relyea <i>The Economy of Nature</i> , 7th edition. 2014. WH Freeman and Co. The printed textbook is not required but is highly recommended. An access card for the LaunchPad website is required. The ISBN listed on the UF Textbook Adoption website is a discounted package that includes both the printed book and a LaunchPad access card. This ISBN is available only through local bookstores. <b>Our course has its own LaunchPad url; access instructions are posted on the Homepage of the course website.</b> Use your GatorLink username (whatever comes before “@ufl.edu” in your UF email address) as your LaunchPad “LMS id”.         |
| Learning Catalytics | We will use Learning Catalytics ( <a href="https://www.learningcatalytics.com/">https://www.learningcatalytics.com/</a> ) to facilitate in-class participation. Instructions to access our course’s Learning Catalytics site are posted on our course website. To participate in required in-class activities, you will need to bring a mobile device (laptop, tablet, smartphone, or cell phone with text messaging).. This is our first term using Learning Catalytics in this course, and we have arranged for free access for all students for one semester. We would appreciate your feedback on the use of Learning Catalytics at the end of the semester. |
| Lab manual          | Available on course website  |
| Statistics manual   | Available on course website  |
| Other readings      | Additional readings may be posted on the course website.   |

### III. Catalog Description

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

### IV. Pre-requisites and Co-requisites

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

You need not major in one of the biological sciences to succeed in the course, but you must have previous training in biology to perform well. Thus, college-level biology is a prerequisite. If you are in doubt about your readiness for this course, please meet with 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 (<http://esa.org/>).

## V. Instructors

*Dr. Jeremy Lichstein*, Department of Biology, 317 Carr Hall

*Dr. Juliet Pulliam*, Department of Biology and Emerging Pathogens Institute

## VI. Course Website

Course materials and information are available on the course **Canvas** 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 and human-modified systems. Lecture will emphasize general principles and models that underlie ecological theory and practice. The laboratory offers students hands-on experience collecting, analyzing, and interpreting data. Students will also conduct independent research projects of their own design. Oral presentations and written reports will help develop 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 you choose.

## VIII. Course Overview and Schedule

A rough schedule of lecture topics is below. A more detailed schedule with reading and other assignments is available on the course website. The course website also provides the laboratory schedule.

| Week | Lecture Topic  |
|------|--|
| 1    | Introduction to Ecology and the scientific method: using observations, experiments, and models to understand ecological patterns and processes |
| 2    | Introduction to Ecology (cont'd); Movement of energy and matter through ecosystems   |
| 3    | Movement of energy and matter through ecosystems   |
| 4    | Adaptations to aquatic and terrestrial environments  |
| 5    | Exam 1; Evolution of organisms   |
| 6    | Life histories, and reproductive strategies of organisms   |
| 7    | Measuring populations and population distributions   |
| 8    | Population growth and regulation; Exam 2   |
| 9    | Growth of structured populations; Species interactions   |
| 10   | Species interactions   |
| 11   | Community structure and function   |
| 12   | Exam 3; Climate  |
| 13   | Climate and soils; Biomes of the world   |
| 14   | Thanksgiving (no class this week)  |
| 15   | Biomes, Landscape Ecology, Biogeography and Biodiversity   |
| 16   | Global Ecology and Conservation  |
|      | Final exam: December 14, 8:15-9:30 am in FAB 103   |

## IX. Expectations and Philosophy

*Commitment to excellence:* As in most areas of biology, the amount of information related to ecology has recently exploded. At the same time, ecologists are taking on increasingly important roles in society as we grapple with how to protect biodiversity and maintain ecosystem services in a rapidly changing world. Our

principle goals are to provide you with the background and tools you need to be a responsible citizen and to pursue advanced studies in ecology, and to illustrate the diverse approaches to research used in ecology.

*Our Responsibilities:* We (the instructors 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 speak with us during office hours, make an appointment, or contact us by 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 and schedules in this Syllabus and posted on the course website.
- Attend lectures. If you have to miss a lecture, obtain notes from a classmate. The instructor's PowerPoint slides alone may not explain all of the important information discussed in class.
- Complete lecture assignments on time, including textbook readings and other homework assignments.
- Complete reading assignments in the Lab Manual prior to attending your lab section.
- Attend the labs and carry out assignments in the Lab Manual. Notify your TA beforehand if you anticipate missing lab for an *acceptable reason*, as described in the Attendance section below.
- Arrive to your lab section on time. You will receive a zero grade for any quizzes or other activities (e.g., field trips) you miss as a result of being late or absent.
- Follow the UF honor code (see below).

## X. Assessments and Grading

### A. Suggestions

Your success in this course depends critically on keeping up with the lecture, readings, quizzes, homework, and lab materials. The best way to earn an "A" is to attend lecture and lab, listen carefully, think critically, and keep up with assignments as the course progresses. Last-minute cramming for exams is not a successful strategy for most students. Synthesis and construction of linkages among concepts requires time and familiarity with the material. Reading quizzes and Lab quizzes should be straightforward if you read and digest the material in advance.

Teaching is a very effective way of learning. We therefore encourage you to work in groups, explain concepts to each other (i.e., teach your classmates), and ask each other questions. Study for exams by going over practice exam questions provided to you. Challenge yourself to think through each problem and construct the answer yourself. Explain your reasoning to your study group; listen to other ways of solving the problem. Understanding the answers to practice exam questions (*why* is *a*, *b*, or *c* the best answer?) will probably help you much more on the exams than just memorizing the answers to practice questions.

### B. Assignments and Grading:

Exams (lecture): There will be four exams throughout the semester. The first three exams will be administered during normal class meeting times. The fourth exam will be administered during the "final" exam period. Exams will not be cumulative, but instead will emphasize the recent topics covered in class and in homework assignments. All material discussed in lecture and assigned as homework for the lecture portion of the course is fair game for exams.

Exams and answer sheets will be provided. Students should bring their own pens/pencils to exams. We recommend #2 pencils and an eraser, but blue or black pen are also acceptable. 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. Students should not leave the classroom during an exam and then reenter. **Please take care of any personal needs before each exam starts!** 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.

Exam Curve: Each exam will be curved according to a normal distribution with a mean of 83% and a standard deviation of 10%, truncated at 100% (i.e., if your curved score is greater than 100%, it will be rounded down to 100%). The following table shows the proportion of students who will receive a curved score greater than or equal to the percent grade indicated in the right column:

| Proportion of students | whose grade is greater than or equal to: |
|------------------------|--|
| 0.903                  | 70%                                      |
| 0.618                  | 80%                                      |
| 0.242                  | 90%                                      |
| 0.115                  | 95%                                      |

For example, the top row indicates that 90.3% of students will receive a curved grade of 70% or higher. Note that **your curved exam score may be higher or lower than your raw exam score**. For example, if the class mean is higher than the mean of the curved distribution (83%), then your curved score will likely be lower than your raw score. **Your final score for each exam will be the maximum of your raw and curved scores for that exam.** Each exam will be curved separately. Curves will be applied only to exams; not to final semester grades or any other grades in the course.

Exam Re-grades: If you feel that we have graded your exam incorrectly, you may submit a written request for a re-grade. Deadlines for requests are 1 week after exams are returned. Your request must be submitted (1) to the instructor who wrote the exam before the deadline; (2) with a typed cover letter detailing why you think the exam should be re-graded; and (3) with your original exam. Note that **your entire exam will be re-graded**, and we will attempt to correct any grading errors that may have caused your original grade to be too low or too high. Aside from re-grading, we will be glad to discuss any aspect of the exam with you during our office hours. Our goal is for you to 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, but your exam will not be re-graded unless you request a re-grade.

**Note:** We may photocopy your original exam before returning it to you. Any alteration to your answers (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 Exam Policy: Make-up exams will be administered in place of in-class exams that are missed due to unavoidable *schedule conflicts* or extraordinary *unforeseen circumstances* (see below). The format of each make-up exam will be at the instructor's discretion, and will typically be an essay exam.

- *Schedule conflict:* If you cannot take the in-class exam due to an unavoidable schedule conflict, you should notify your instructor at least two weeks prior to the in-class exam, or as soon as possible.
- *Unforeseen circumstances:* If you miss an in-class exam due to extraordinary unforeseen circumstances (e.g., medical emergencies), you must notify your instructor as soon as possible, and you must provide documentation of the circumstances that prevented you from taking the exam.

Reading Assignments (lecture): Readings are assigned to help you develop basic knowledge in ecology and to provide context for in-class lectures, discussions, and activities. Readings and lectures are *complementary*; one does not replace the other. Readings will expose you to a lot of content, not all of which will be covered in class. Lectures will cover selected topics in depth, including some material not covered in reading assignments.

**Readings should be completed prior to class on the date indicated in the Lecture Schedule on the course website.** For optimal performance on in-class activities, and to maximize your comprehension of lecture material, it is recommended that you carefully read and think about all assigned material, including figures. Pay special attention to highlighted terms and review questions in the textbook. We recommend taking notes as you read, so you can refer back to these notes when preparing for exams.

Homework (lecture): Unless stated otherwise, homework assignments for the lecture part of the course are **due one hour before class** on the date they appear in the Lecture Schedule on the course website. Homework cannot be submitted late for credit, except under unusual circumstances (e.g., serious illness) that must be

documented. Homework includes activities in the LaunchPad website, and may also include additional assignments. LaunchPad activities include online quizzes and Learning Curve exercises (you will receive full credit for Learning Curve if you complete the activity on time, and 0 credit otherwise). Like all websites, LaunchPad may occasionally be inaccessible or otherwise malfunction. To compensate for these anticipated technical glitches, your final semester LaunchPad points will be increased by 15 points and then rounded down to the maximum number of assigned points. For example, if 100 LaunchPad points are assigned over the course of the semester, and you earn 90 of them, your LaunchPad grade would first be increased by 15 points from 90 to 105, and then rounded down to 100. Occasional technical problems with LaunchPad are to be expected. However, if you experience frequent problems, you should contact LaunchPad technical support and also notify your instructor by email (**reminder: please use Canvas mail for all course correspondence**).

**In-class Activities (lecture):** There will be regular in-class activities (e.g., quizzes, polls, practice exam questions) that require your participation. These activities will be unannounced and may be graded for participation and/or for correctness. Typically, your responses will be submitted via Learning Catalytics. You must have a Learning Catalytics account and bring a mobile device to class to participate. You will have an opportunity to earn roughly 100 in-class points during the semester. As with LaunchPad, occasional technical failures are expected with Learning Catalytics; e.g., the system fails to record your answer, or your phone or laptop ran out of batteries. To compensate for these anticipated glitches, your final semester Learning Catalytics points will be increased by 15 points and then rounded down to the maximum number of assigned points, as explained above for LaunchPad. **Please do not interrupt class to report a technical problem with Learning Catalytics.** The 15 point grade adjustment should more than compensate for occasional glitches. If you experience frequent technical problems with Learning Catalytics, please contact their technical support and also notify your instructor by email. Missed in-class points due to absence will be handled as described in the Attendance section below.

**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 quizzes, short assignments, lab reports, and your independent project. Due dates and point values for lab assignments are listed on the Lab Schedule on the course website. **Unless stated otherwise, lab assignments are due one hour before your lab section meets. Lab assignments can be submitted up to 1 week late, with a 10% grade penalty per day (excluding weekends and UF holidays).** For example, if you submit an assignment 2 days late, and the quality of the work merits a 90% grade, your grade for this assignment would be 70% (20% reduction from 90%).

**Semester Grade Calculations:**

Your final semester grade is the percent of points you earn out of the total possible points for the semester. Each exam is worth 100 points, and there will be four exams. The other point categories below are only approximate, because homework assignments, quizzes, etc. are not completely pre-determined at the beginning of the semester. The **approximate** point breakdown is:

|                               |                             |
|-------------------------------|-----------------------------|
| Exams (4; 100 points each)    | 400 (40% of semester grade) |
| Homework (lecture)            | 100 (10% of semester grade) |
| In-class activities (lecture) | 100 (10% of semester grade) |
| Laboratory                    | 400 (40% of semester grade) |
| Total                         | 1000                        |

Final scores will not be rounded (e.g., 89.9% is not 90%). The grade scale is:

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

Note that a “C–” is not a qualifying grade for critical tracking courses (e.g., Major, Minor, or Gen Ed). In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). A “C–” average is equivalent to a GPA of 1.67, and therefore does not satisfy this graduation requirement. More information on grades policies is at: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

### 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 health or other personal issues, please see your instructor as soon as possible so that we can help you.

## XI. Email Communication

**Please use Canvas Mail for all email correspondence for this course.** Correspondence regarding the lecture and the overall course should be directed to the instructors. Questions about the laboratory should be directed to teaching assistants.

## XII. Attendance

You are expected to attend all lectures and labs, and you are responsible for all material covered. If you are absent from class when a quiz or other activity requiring your participation occurs, you will receive a zero grade unless the absence is excused. An absence is considered *excused* if there is an *acceptable reason* according to UF policy (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>). Examples of acceptable reasons are medical illness, religious holidays, military obligation, and the twelve-day rule. For religious holidays, students are required to notify the instructor prior to the absence, but documentation of the religious holiday is not required. In all other cases, the following policies apply: It is your responsibility to notify the instructor of an excused absence and to provide documentation of an acceptable reason. Otherwise, the absence will be considered *unexcused* and will result in a *zero grade* for any missed activities. Whenever possible, notify the instructor by email prior to the absence. When this is not possible (e.g., due to unexpected emergency or illness), the instructor should be notified as soon as possible. If you miss class for any reason (excused or not), you are responsible for the material covered. Visit the course website for any lecture slides/notes and course announcements. There are no make ups for missed in-class activities, even for excused absences. For in-class points missed due to excused absences, you will be assigned a point value based on your semester average (up to that date) for similar activities. For example, if you miss 5 Learning Catalytics points due to an excused absence, and you have an 80% Learning Catalytics average, then you will receive 4 Learning Catalytics points. As noted above, you will receive 0 points if the absence is unexcused.

## 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, including time in lectures and labs. PCB4043C is 4 credits, so you should expect to devote 12-16 hours per week (on average) to this course. A recommended time allocation is below.

| Activity              | Hours per Week |
|-----------------------|----------------|
| Lecture (in class)    | 3              |
| Lecture Assignments   | 4              |
| Lab (in lab or field) | 4              |
| Lab Assignments       | 3              |

If you find yourself spending more than 16 hours per week on this course, discuss this with your instructor to see if you can refine your work habits. If you find yourself spending less than 12 hours per week on average, please recognize that you may have difficulty learning and comprehending the material, and this will probably be reflected in poor performance on 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, and only for the purpose of taking notes or otherwise participating in classroom activities. Approved devices include laptops and tablets. Phones may be used only for the purpose of submitting answers to Learning Catalytics. 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. If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). 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 student; 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 person X and person Y for their helpful comments on a previous draft, and person Z 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).

#### **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. The resources include:

- The UF Counseling & Wellness Center (<http://www.counsel.ufl.edu/>, 3190 Radio Rd, 392-1575) offers psychological and psychiatric services. For Emergency Assistance, please see <http://www.counseling.ufl.edu/cwc/Emergency-Services>
- The UF Career Resource Center (<http://www.crc.ufl.edu/>, Reitz Union, 392-1601) offers career and job search services.
- Many students experience test anxiety and other stress related problems. "A Self Help Guide for Students" is available through the Counseling & Wellness Center website: <http://www.counsel.ufl.edu/>

#### **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.