

## I. Course Information

Course Number:	PCB 4043C
Course Name:	General Ecology
Credit hours:	4
Course website:	Canvas (elearning.ufl.edu)
Lecture time:	Tues & Thurs, periods 3-4 (9:35-11:30a) in Fine Arts B Room 103. We will often end by 11:00a, but please be prepared to stay until 11:30a.
Lecture office hours:	Tues & Thurs in classroom, right after lecture. Or contact instructor for an appointment.
Lab time:	Each section is 4 periods, 1 day per week; times are posted on the course website.
Lab location:	110 Carr Hall
Course fees:	\$78.11

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

## II. Required Materials

Textbook:	<i>Ecology in Action</i> , F. Singer, 2016, Cambridge University Press. Both paper and e-book versions are available, and either is acceptable for our class. We will use the textbook and associated online resources, including the Online_RCompanion_Student and CSV files ( <a href="http://www.cambridge.org/us/academic/subjects/life-sciences/ecology-and-conservation/ecology-action?format=HB-XOb4fPwtX29P6w7J.97">http://www.cambridge.org/us/academic/subjects/life-sciences/ecology-and-conservation/ecology-action?format=HB-XOb4fPwtX29P6w7J.97</a> )
Lab manual:	Available on course website
Statistics manual:	Available on course website
Other readings:	Additional readings may be posted on the course website.
Software:	R (free software available through <a href="http://cran.r-project.org">cran.r-project.org</a> ). Installation instructions will be provided prior to the first R activity.

## 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 contact your instructor as soon as possible.

## V. Instructors

### Lecture

*Dr. Mathew Leibold*, 627 Bartram Hall

*Dr. Hannah Vander Zanden*, 420 Carr Hall

### Lab teaching assistants

*Justin Gearhart*, 312 Carr

*George Glen*, 612 Carr

*Pablo Moreno Garcia*, Building 116, but will hold appointments in 110 Carr

*Javiera Rudolph*, 309 Carr

## VI. Course Website

Course materials and information are available on the course website indicated above (see Course Information). Students are responsible for all announcements made in class and/or posted on the course website.

## VII. 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 your TA.

## VIII. 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 studying ecological questions;
- 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.

## IX. Course Overview and Schedule

A rough schedule of lecture topics is below, which may be subject to change. A more detailed schedule with readings, and other assignments is available on the course website. The course website also provides the laboratory schedule.

<i>Date</i>	<i>Lecture Topic</i>
23-Aug-18	Intro
28-Aug-18	Population growth
30-Aug-18	Distribution and dispersal
4-Sep-18	Food webs
6-Sep-18	Demography and population growth
11-Sep-18	Conservation
13-Sep-18	Conservation
18-Sep-18	<b>Exam 1</b>
20-Sep-18	Introduction to R
25-Sep-18	Interspecific competition
27-Sep-18	Competition + Predation
2-Oct-18	Predation
4-Oct-18	Facilitation
9-Oct-18	Facilitation
11-Oct-18	<b>Exam 2</b>
16-Oct-18	Disturbance and succession
18-Oct-18	Statistical tests in R
23-Oct-18	Biodiversity patterns
25-Oct-18	Metacommunity ecology
30-Oct-18	Geographical and landscape ecology

1-Nov-18	Ecology and evolution
6-Nov-18	Biodiversity and ecosystem function and stability
8-Nov-18	<b>Exam 3</b>
13-Nov-18	Nutrient uptake and limitation
15-Nov-18	Carbon and Nutrient cycles
20-Nov-18	Stoichiometry ecology
27-Nov-18	Biomes and Climate
29-Nov-18	Climate change
4-Dec-18	<b>Exam 4</b>

## X. 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 prior to attending your lab section.
- Attend the labs and carry out assignments. 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 Student Honor Code (see below).

## XI. 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.

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 help you much more on exams and in your career than just memorizing the answers to practice questions.

**B. Assignments and Grading:**

Exams (lecture): There will be four exams during the semester. Each will emphasize the topics covered in class and homework assignments since the last exam. All material discussed in lecture and assigned as homework for the lecture portion of the course is fair game for exams.

Exams will be open-note. No books or electronic devices are permitted. Notes used during exams must be hand-written on paper. Students are encouraged to study in groups, but **your exam notes must be written in your own words** (unless you are quoting a definition from the book or slides). Distributing or plagiarizing exam notes will be considered a violation of the UF Honor Code. Exam notes may be hand-written and hand-drawn, but **cannot** include a printed copy of lecture slides or any photocopied material. The goal of these policies is to ensure that each student does their own exam preparation and thinks about the material, rather than simply duplicating content from the textbook, slides, or another student.

Answer sheets will be provided for in-class exams. Students should bring their own pens/pencils to exams. We recommend #2 pencils and an eraser; 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!** 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 one 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 accounting errors (e.g., your points were added up 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:** Instructors may photocopy your original exam before returning it to you. Any alteration to your answers in an exam submitted for a re-grade (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 be considered a violation of the UF Honor Code.

Makeup Exam Policy: Makeup exams will be administered in place of in-class exams that are missed due to an excused absence (see section below on Attendance and Excused Absence), which often occur due to unavoidable *schedule conflicts* or extraordinary *unforeseen circumstances* (see below). Note that not all

schedule conflicts qualify as an excused absence. The format of the makeup exam may differ from the in-class exam; e.g., the makeup exam may rely more heavily on essay questions.

- *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.** 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. Taking notes as you read is highly recommended.

***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.

***In-class Activities and Quizzes (lecture)***: There will be in-class activities and quizzes that require your participation. These activities may be unannounced and may be graded for participation and/or correctness. If you miss in-class points due to an excused absence (which must be documented), contact your instructor as soon as possible. There will be no makeup opportunities for in-class work that is missed due to unexcused absences.

***Laboratory***: Lab points are part of the overall course grade. Lab 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.** 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%). Makeup assignments are available for labs missed due to excused absence (see Attendance policies below). **Whenever possible, let your TA know ahead of time if you will miss lab due to an excused absence**, so that a makeup lab can be scheduled if possible.

***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)
Other lecture points (homework & in-class)	180 (18% of semester grade)
<u>Laboratory</u>	<u>420 (45% of semester grade)</u>
Total	1000

The grade scale is:

A ≥ 92.5%; A- ≥ 89.5%; B+ ≥ 86.5%; B ≥ 82.5%; B- ≥ 79.5%; C+ ≥ 76.5%; C ≥ 72.5%; C- ≥ 69.5%;  
D+ ≥ 66.5%; D ≥ 59.5%; D- ≥ 56.5%; E < 56.5%

The above cutoffs are rigid. Grades will not be rounded; e.g., 89.50 is an A-, and 89.49 is a B+. 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/UGRD/academic-regulations/grades-grading-policies/#gradingpoliciestext>.

### C. Special Treatment

Please do not request individual special treatment regarding grading at the end of the semester. We do not adjust individual grades. 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.

## XII. Attendance and Excused Absence

You are expected to attend all lectures and labs, and you are responsible for all material covered. The Makeup Exam Policy is discussed above. If you miss a lab, you will receive a zero grade for any quizzes or other activities unless the absence is excused. An absence is **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 university-sponsored activities up to 12 days per semester. For religious holidays, please notify your instructor (for exam conflicts) or TA (for lab conflicts) prior to the absence, but documentation of the religious holiday is not required. In all other cases, it is your responsibility 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.

## 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. Do not engage in side-conversations during lecture or lab. This can be distracting to other students and your instructor or TA.

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. Unapproved electronic devices include phones, 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 feel you have a legitimate need for an electronic device other than a laptop or tablet.

## XV. Academic Honesty and the Honor Code

Each student is responsible for reviewing and adhering to the UF Student Honor Code: <https://sccr.dso.ufl.edu/students/student-conduct-code/>. If you witness any instances of academic dishonesty, please notify your instructor, TA, or the Dean of Students Office (352-392-1261).

**We encourage students to work together and to help one another master the material.** You can study together, collect data together, help each other in the field, discuss ideas, practice presentations in front of one another, 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 makeup (and has not yet taken an exam).

## XVI. Accommodations for Students with Disabilities

Students who require accommodations for a disability must contact the UF Disability Resource Center (<https://www.dso.ufl.edu/drc>) to request an Accommodation Letter. No accommodations are available to students until the letter is provided to the instructor. Once your instructor receives your letter, your instructor and TA will be happy to work with you to arrange the necessary accommodations.

## XVII. UF Counseling, Self-Help, and Career Services

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Resources are available on-campus for students with personal problems or lacking clear career and academic goals. The resources include:

- The UF Counseling & Wellness Center (<http://www.counseling.ufl.edu/cwc/>, 352-392-1575) offers counseling services for depression, anxiety, and other mental health concerns. For Emergency Assistance, please see <https://counseling.ufl.edu/services/crisis/>.
- Many students experience stress and anxiety related to academic performance and college life. In addition to counseling services, the UF Counseling & Wellness Center provides self-help resources that you may find helpful: <https://counseling.ufl.edu/resources/online/>.
- The UF Career Resource Center (<http://www.crc.ufl.edu/>, Reitz Union, 392-1601) offers career and job search services.

## XVIII. Software Use

All faculty, staff and student of the University are required and expected to obey 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.