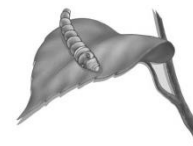




WELCOME TO ECOL 3500: ECOLOGY



LECTURES: MWF, 9:05 – 9:55 am, 404B Biological Sciences Bldg.

LABS: various times & days, 302 Science Learning Center

INSTRUCTORS:

Dr. Elizabeth King
710 Biological Sciences Bldg
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Dr. Carrie Keogh
134 Ecology Bldg.
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LAB INSTRUCTORS:

Amy Briggs
Katie Brownson
Anya Brown
Elise Krueger
Carly Phillips



PREREQUISITES: (BIOL 1104, or BIOL 1108+L, or PBIO 1220+L) and (CHEM 1211+L or CHEM 1311H+L)

COURSE DESCRIPTION: 4 Credits. Population structure and dynamics, species interactions, organization and classification of communities, and nutrient cycling and energy flow in ecosystems.

OBJECTIVES: This course is designed to give a solid, fundamental understanding of how organisms interact with their environment and other life forms, shaping the world around us. We will examine processes at numerous scales, from individuals to communities and ecosystems. As humans are also organisms, we will also explore how ecological processes shed light on human-environment interactions. The course aims to empower students with knowledge to understand, analyze, and evaluate both scientific and societal dimensions of environmental issues.



TEXTBOOKS:

- ❖ Required course textbook: Ricklefs & Relyea. 2014. *The Economy of Nature* (7th edition).
- ❖ Recommended resources: Gotelli, N. *Primer of Ecology* (any edition); a subset of primary literature case studies will be made available on eLC



COURSE FORMAT, POLICIES, AND EXPECTATIONS:

- **LECTURES:** 50-minutes with a number of in-class participation exercises.
 - Lectures will cover content from Ricklefs chapters, plus special topics of environmental/social relevance.
 - Any readings for special topics will be announced in advance and posted on eLC.
 - Students are responsible for all material covered in the lectures, including special topics.
 - We will do our best to post a handout/powerpoint for each lecture by 8am the morning of class.
NOTE: the handouts are not complete lecture notes! They will contain blanks for you to fill in.
- Ecology is about thinking through relationships and processes. The lectures make those dynamics easier to understand by walking through them. **Attending lectures** will greatly facilitate your success in this course – both by helping you grasp the ideas, and through participation points.
- **IN-CLASS EXERCISES** are quick, easy opportunities to reflect, interact, provide feedback, and earn credit for attending and engaging on a day to day basis. These may be graded for content or simply for completion at the discretion of the faculty. Exercises that are graded for content will be

announced by the faculty at the time they are assigned. If you have to miss class for a documented reason, please let us know beforehand, and provide formal documentation.

- In-class exercises are unannounced and held during lecture, and cannot be made up.

- **LABS:** Weekly, including outdoor field trips. **LABS START 2ND WEEK OF CLASS.** Your specific Graduate Teaching Assistant will communicate with your lab section about the lab syllabus, schedule, requirements, etc.
- **EXAMS:** 3 in-class (multiple choice and short answer), and a concise final exam covering new material and some cumulative material.
 - Students are expected to be active learners: attending class, taking notes, asking questions, and reading the text in order to prepare for exams.
 - Most of the content of powerpoint presentations will be posted on the course eLC site (eLC.uga.edu) to help you study. Key concepts are often left as blanks for you to fill in, using lecture notes and the text. ***Therefore, these powerpoints by themselves do not constitute a complete resource for studying for exams. They require your input!***

TIPS FOR SUCCESS:

- ✓ ***How to use the textbook in your learning...*** Content from the text book provides depth and clarity on lecture topics. Not every part of each chapter of the book will be covered in the class. The lecture materials should be your first guide for knowing what to study.
 - ✓ At the end of each Ricklefs chapter are study questions. Can you answer them??
 - ✓ There is a companion website for the text - you can register for free and take self-exams. These are excellent preparation for class exams!
 - ✓ Learning ecology is not about memorizing terms. There are terms you need to know, but it's much more about understanding processes. We suggest finding a team of classmates to study with, and that you get into the habit of discussing concepts that are covered in lecture.
 - ✓ We will occasionally post journal articles that relate to particular case studies we cover in lecture – these are usually also an excellent resource for review on specific topics.
- **Note:** Missed exams may not be made up. If unavoidable circumstances arise, absence from exams must be arranged in advance and only for serious reasons. In special cases of documented emergencies, a makeup exam may be allowed, at the discretion of the instructors (<http://bulletin.uga.edu/bulletin/ind/attendance.html>).



GRADE SCHEDULE

| | | |
|---------------|----------|------|
| Exam 1 | 150 pts | 15% |
| Exam 2 | 150 pts | 15% |
| Exam 3 | 150 pts | 15% |
| Final Exam | 150 pts | 15% |
| Participation | 100 pts | 10% |
| Lab | 300 pts | 30% |
| <hr/> | | |
| Total | 1000 pts | 100% |



COMMUNICATION:

We will use eLC and email to communicate class announcements. If you need to contact us about an absence, office hours, or a question, please be sure to include "ECOL 3500" in the subject line of your emails. We do our best to respond to emails within 24 hours (during the week) – please email again if you haven't heard back.



ACADEMIC HONESTY:

In this course, all students must uphold their pledge to the University's Honor Code: **"I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others."**

All academic work must meet the standards contained in *A Culture of Honesty*, and each student is responsible for knowing the standards and the meaning of academic honesty. Please refer to the UGA policy, located on the web at <http://honesty.uga.edu/> ***Lack of knowledge of what constitutes dishonest work is not an acceptable excuse. If you're not sure – ASK FIRST!***

Students should also be aware that it is the instructors' **responsibility** to report cases of suspected academic dishonesty directly to the Office of the Vice President for Instruction. This can result in a grade of "F" for the course, even worse penalties from the University, and much grief all around.

SPECIAL ACCOMMODATIONS:

Students with disabilities or health related issues who may need class accommodation should consult with the instructor as soon as possible. Accommodations cannot be provided until a student has gone through The Disability Resource Center (DRC) (<https://drc.uga.edu/students/register-for-services>; (706)-542-8719) and we have discussed appropriate accommodations for this course. Accommodations cannot be provided retroactively. All conversations will be strictly confidential.

NOTE: This course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Schedule of Lectures and Exams – subject to change!

| Week | | Monday | | Wednesday | | Friday |
|--|--------|--|------------------------|---|--------|---|
| 1 EGK | Aug 14 | Introduction | Aug 16 | Germs are Us! | Aug 18 | Ch.1 Intro and *Systems Thinking |
| 2 EGK | Aug 21 | Ch. 5&6 Climate and biomes | Aug 31 | Ch. 2&3 Adaptations to Water & Energy | Aug 25 | * Ecosystem Engineering: The Green Revolution |
| 3 CLK | Aug 28 | Ch. 7 Adaptation & Evolution | Aug 30 | Ch. 7 Adaptation and Evolution; Ch. 4 pg. 89-95 | Sep 1 | * Variation |
| 4 EGK | Sep 4 | HOLIDAY (Labor Day) | Sep 6 | Ch. 4 Behavioral adaptations to variable environments | Sep 8 | * Adaptations & Disease Ecology |
| 5 EGK | Sep 11 | Ch. 13 Population Genetics | Spe 13 | Diversity & Exam Review | Sep 15 | EXAM 1 |
| 6 EGK | Sep 18 | Ch. 8 Life Histories | Sep 20 | Ch. 9 Sex and Evolution | Sep 22 | Coevolution |
| 7 EGK | Sep 25 | Ch. 10 Family, Society & Evolution | Sep 27 | * Game Theory & Tragedy of the Commons | Sep 29 | Ch. 11 Structure of Populations |
| 8 EGK | Oct 2 | * Population Ecology and Conservation | Oct 4 | Ch. 12 Population Growth | Oct 6 | Ch. 13 Spatiotemporal Dynamics |
| 9 EGK | Oct 9 | Metapopulations | Oct 11 | Species interactions overview | Oct 13 | EXAM 2 |
| 10 CLK | Oct 16 | Ch. 14 & 15 Consumer-Resource Interactions | Oct 18 | Ch. 14 & 15 Consumer-resource cont'd | Oct 20 | * Competition, parasites, and invasions |
| 11 CLK | Oct 23 | Ch. 16 Competition | Oct 25 | Competition cont'd | Oct 27 | HOLIDAY (Fall Break) |
| 12 CLK | Oct 30 | Ch. 18 Community Structure | Nov 1 | Ch. 19 Succession & Community Development | Nov 3 | *Community stability & alternative stable states |
| 13 CLK | Nov 6 | EXAM 3 | Nov 8 | Ch. 20 Energy in ecosystems | Nov 10 | * Carbon & climate |
| 14 CLK | Nov 13 | Ch. 21 Movement of Elements in Ecosystems | Nov 15 | Ch. 22 Biogeography and biodiversity | Nov 17 | * Consequences of Species Loss/ Biodiversity and ecosystem function |
| 15 | Nov 20 | HOLIDAY | | HOLIDAY | | HOLIDAY |
| 16 CLK | Nov 27 | Ch. 15 Disease Ecology (humans) | Nov 29 | * Disease Ecology cont'd (wildlife) | Dec 1 | * Disease and climate |
| 17 CLK | Dec 4 | Ch. 23 Biodiversity, extinction & conservation | Dec 5 (TUES) | Ch. 23 cont'd; course wrap-up | Dec 8 | FINAL EXAM |
| * Special Topic Seminar: Check eLC for additional readings! | | | | | | |
| Withdrawal Deadline (WP): Thursday, October 19. | | | | | | |
| Withdrawal with Failure (WF) is mandated for withdrawals after 5pm this day. | | | | | | |
| Final Exam: Friday, December 8, 9:05-9:55 AM | | | | | | |