

Introduction to Ecology (ECOL 3500) Fall 2022

JP Schmidt, Instructor

Course Details	<u>Credit</u> 3 hours	When & Where?
<u>Pre-requisites</u> (BIOL 1104 and BIOL 1104L) or (BIOL 1108 and 1108L) or (BIOL 2108H and 2108L)] and [(CHEM 1211 and CHEM 1211L) or (CHEM 1311H and CHEM1311L) <u>REQUIRED materials</u> Articles are available on eLC or via links <u>OPTIONAL materials</u> Molles and Sher: <i>Ecology: Concepts and Applications 8th edition</i> (ebook can be rented for \$45: https://www.mheducation.com/highered/product/ecology-concepts-applications-molles-sher/M9781259880056.html#buying-options) <u>Course format</u> Slides, videos, and readings posted on eLC before class, discussion of them in class <u>Office hours</u> Wednesday 3-5, or for appointment, please e-mail (jps@uga.edu)		Tu-Th 3:55-5:10 pm Miller Learning Ctr Rm 214 <u>Course description</u> Population structure and dynamics, organization and classification of communities, and nutrient and energy flows in ecosystems.

Course objectives

Students will develop an understanding of the structure and function of natural systems from the perspective of scientific discipline, an introduction to selected scientists investigating natural systems, and the experimental design and results of their research. The domain of ecology will be defined defining emergent principles at the hierarchical level. The role of man as a pervasive force within the natural environment will be discussed, particularly the emerging discipline of landscape ecology and global conservation of species. The understanding of environmental health and its inextricable involvement with human health is an expected learning outcome.

Attendance

Students are expected to attend all classes in person (excepting 3 unexcused absences) – having done any assigned reading, worked through the assigned lecture slides, and attempted to answer the synthesis questions. During class time, I will review questions from the slides and/or on the readings for that day. Attendance will be recorded based on 1) in-class responses (during every class) to a group question or problem posted on eLC; 2) sign-in sheet open for the 1st 10 minutes of class, and 3) in-class responses to a survey on the quality of each class (and opportunity for you to post any lingering questions) at the end of class on eLC. If you attempt to complete the in-class response/survey without attending in person, you will be deemed in violation of the UGA honor code. If you are late for class (so that your name isn't on the sign-in sheet) or need to leave early, you must provide a valid excuse, or you will not receive credit for attending and participating.

Grading

Grades will be assigned following this plus/minus grading scale: 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 = 60-69.9, F = <60. Grades **will NOT be rounded** (ex. 92.99 will receive an A-, while 93.00 will receive an A).

Syllabus quiz	1%
Attendance	10%
Quizzes and homework assignments (12)	42%
Midterm exams (3)	33%
Final exam	13%
Course evaluation	1%

Quizzes/Homework assignments (open book and notes!) to be taken or turned in **on eLC** will be due before midnight **every Thursday** in weeks without an exam. We will go over the quiz first thing in class.

Exams

3 exams, and a **partly cumulative final exam**. Exams and the final exam will be **administered in-class online**, through eLC, and will include **multiple choice, multi-select, matching, and ranking/ordering questions**. Questions will be written to assess your ability to synthesize material presented in class, including any assigned videos or readings. Like most biology-related courses, exams in this class will test you beyond memorization of terms. Exams will include new scenarios, but you should be able to reason through based on information we will have discussed in class.

Preparing for exams

Each set of slides includes 'synthesis questions' throughout to help you identify and ensure your understanding of key concepts. At the end of each Molles *et al.* chapter are study questions. You can also use these questions to check your grasp of the material. To ensure deeper understanding of course material, I suggest finding a team of classmates to study with and discuss concepts that are covered in lecture. Quizzes and exams are open book and open note. **However, you may not use online assistants such as Chegg. Moreover, I will be using UGA resources to check for violations of academic honesty.**

Make-up policy

Students may **miss any one of the three mid-term exams for any reason (sickness, travel, transportation issues, death in the family, etc.) without any penalty**. If a student completes all three mid-term exams, the lowest mid-term exam score will be dropped. The final exam is mandatory. Students may **NOT** drop the score on the final exam. Make-up exams will **NOT** be allowed for any exam except in the rare instance where a student experiences very serious personal illness or immediate family emergency on the date of the exam with the following conditions: 1) Student must notify the instructor of the reason for their absence prior to the exam, 2) Student must provide official documentation of serious personal illness or immediate family emergency within 2 days of the exam date, and 3) if the documentation is confirmed, the

make-up exam will be taken at the earliest possible date following the scheduled exam, will not be identical to the class exam, and may be essay based. The same policy applies to quizzes and homework assignments. In this case, I will drop the lowest 2 of 12 in all.

Important Dates

First class	Wednesday, August 18
Add/Drop	August 17-23
Exam 1	Tuesday, September
Withdrawal Deadline	Monday, October 24
Exam 2	Tuesday, October 11
Exam 3	Tuesday, November 8
Last class	Thursday, December 1
Reading Day	Wednesday, December 7
Final Exam	Thursday, December 8, 3:30 – 6:30 pm

Tentative schedule

Date	Day	Topic	Slides and recorded lecture on eLC	Readings (required, in bold, are on eLC)
18-Aug	Th	Introduction & overview	Intro to Ecology	Ecology vs environmentalism
23-Aug	T	Climate & productivity	Climate	Chap 2*, 23
25-Aug	Th	Soils & productivity	Soils	Chap 2*, 23
30-Aug	T	Aquatic biomes & productivity, Scale	Aquatic systems, Scale in ecology	Chap 3
1-Sep	Th	Temperature & Water	Temperature, Water	Chap 5, 6
6-Sep	T	Energy & Nutrients	Energy, Nutrients	Chap 7
8-Sep	Th	Adaptations to variable environments	Adaptations	Vitasse <i>et al.</i> 2018
13-Sep	T	Exam 1		
15-Sep	Th	Evolution, sex, genetic recombination	Evolution, Sex	Chap 4
20-Sep	T	Social relations & Behavior	Social relations, Behavior	Chap 8
22-Sep	Th	Population structure	Population structure	Chap 9
27-Sep	T	Population growth	Population growth & regulation	Chap 11 Populus intro video
29-Sep	Th	Population dynamics	Population dynamics	Chap 10
4-Oct	T	Life histories	Life histories	Chap 12
6-Oct	Th	Populations in space	Metapopulations	
11-Oct	T	Exam 2		

13-Oct	Th	Consumer-resource interactions	Species interactions	Chap 17.1-17.2
18-Oct	T	Competition	Competition	Chap 13
20-Oct	Th	Predation & herbivory	Predation/herbivory	Chap 14
25-Oct	T	Parasitism & disease	Parasitism/disease	Chap 14 Vora et al. 2022
27-Oct	Th	Mutualisms	Mutualisms	Chap 15 "Germs Our Us"
1-Nov	T	Species abundance & diversity	Diversity	Chap 16
3-Nov	Th	Succession	Succession	Chap 20
8-Nov	T	Exam 3		
10-Nov	Th	Community structure	Community structure	Chap 17
15-Nov	T	History & biogeography	Biogeography	Chap 22
17-Nov	Th	Primary & secondary production	Production	Chap 18
22-Nov	T	Nutrient cycling	Nutrient cycling	Chap 19 Lavery et al. 2010
24-Nov	Th	THANKSGIVING!		
29-Nov	T	Human impacts, climate change	Human impacts	
1-Dec	Th	Regime change/Conservation ecology	Conservation ecology	

*Chapters from Molles & Sher 8th edition – **OPTIONAL**

Course plan

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

Diversity

Diversity encompasses acceptance and respect. The term "diversity" encompasses differences of culture, background and experience among individuals and groups. Such differences include, but are not limited to, differences of race, ethnicity, national origin, color, gender, sexual orientation, gender identity, age, and abilities, as well as political and religious affiliation and socioeconomic status. Odum School of Ecology at the University of Georgia embraces a commitment to diversity by modeling for the state and nation, a community of individuals and programs which seek to reduce prejudice, disparities, and discrimination and build a supportive environment for all.

University Honor Code & Academic Honesty

As a University of Georgia student, you have agreed to abide by the UGA academic honesty policy, "A Culture of Honesty", and the Student 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 described in "A Culture of Honesty" found at: <http://honesty.uga.edu>. You are responsible for informing yourself about the university's standards before performing any academic work. Lack of knowledge of the academic honesty policy is not a reasonable

explanation for a violation. Please ask if you have questions related to course assignments and the academic honesty policy. Any form of possible academic dishonesty will be reported to the UGA Office of the Vice President for Instruction.

Accommodations for Disabilities

If you require a disability-required accommodation, it is essential that you register with the Disability Resource Center (Clark Howell Hall; <https://drc.uga.edu>; 706-542-8719 [voice]; 706-542-8778 [TTY]) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations. Please note that accommodations cannot be provided retroactively.

Mental Health and Wellness Resources

- If you or someone you know needs assistance, you are encouraged to contact Student Care and Outreach in the Division of Student Affairs at 706-542-7774 or visit <https://sco.uga.edu>. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services.
- UGA has several resources for a student seeking mental health services (<https://www.uhs.uga.edu/bewelluga/bewelluga>) or crisis support (<https://www.uhs.uga.edu/info/emergencies>).
- If you need help managing stress anxiety, relationships, etc., please visit BeWellUGA (<https://www.uhs.uga.edu/bewelluga/bewelluga>) for a list of FREE workshops, classes, mentoring, and health coaching led by licensed clinicians and health educators in the University Health Center.
- Additional resources can be accessed through the UGA App.
 - UGA has several resources to support your well-being and mental health: <https://wellbeing.uga.edu/>
 - Counseling and Psychiatric Services (CAPS) is your go-to, on-campus resource for emotional, social and behavioral-health support: <https://caps.uga.edu/>, TAO Online Support (<https://caps.uga.edu/tao/>), 24/7 support at 706-542-2273. For crisis support: <https://healthcenter.uga.edu/emergencies/>.
 - The University Health Center offers FREE workshops, classes, mentoring, and health coaching led by licensed clinicians or health educators: <https://healthcenter.uga.edu/bewelluga/>

FERPA Notice

The Federal Family Educational Rights and Privacy Act (FERPA) grants students certain information privacy rights. For details, please visit <https://apps.reg.uga.edu/FERPA>.