



Ecological Basis of Environmental Issues (Honors + Lab; ECOL 1000H-1000L) Summer 2024



Course Description:

Ecological concepts that form the basis for understanding environmental issues confronting us: population growth, loss of diversity, resource limitation, pollution, and global climate change.

Instructors:



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Course Objectives:

During this course, we will explore the ecological basis of key environmental & sustainability challenges in a place-based way as we travel across the United States. In addition, you will be integrating the ecological concepts that you learn and observe with geology and anthropology throughout our trip.

Specifically, by taking this course, you will be able to:

- Explain basic ecological principles that pertain to populations, communities, and ecosystems.
- Discuss a variety of environmental problems from a socio-ecological perspective in diverse terrestrial and aquatic systems.
- Compare and contrast the different environments that we visit from ecological and socio-ecological perspectives.
- Consider environmental ethics and its intersections with anthropology.
- Perform field sampling and observational research to gain critical thinking skills and insights about the scientific method.
- Use evidence-based arguments to communicate about ecological issues orally and in writing.

Course Details

Credit

4 credits,
CRNs 71823 (lecture),
71824 (lab)

Prerequisites

None

Required resources

None

Primary format

Field Study;
In-person lecture + lab

Digital Course Pack:

You will be provided with a digital course pack that contains a variety of course materials, including readings from a variety of sources (peer-reviewed journals, popular press articles, book excerpts), selected podcasts, and short video clips. This course pack also includes maps and figures that provide helpful context as we travel. We will regularly announce assigned course content to review throughout the course and we expect you to carefully read/watch/listen to those materials and be prepared to discuss them by the dates specified.

Course Activities & Assessments

Our course assessments include a mixture of discussions, written exams, and practical exercises including field observations, field research projects, and related reports and presentations. Detailed descriptions and relevant grading guidelines for each assignment will be provided during class.

- **Exams:** We will have four closed-book exams during the semester. Exams are cumulative; we will be revising concepts throughout the course and making connections among the places we visit.
- **Projects:** You will complete three lab projects during our trip. For each project you will collect class data, analyze the data, and turn in a brief written report.
- **Discussion participation:** Your classmates enrolled in ECOL 4160 will be leading discussions of peer-reviewed scientific papers throughout the course. You are expected to read each assigned paper in advance and actively participate in each discussion.
- **Field Notebooks:** You will be required to keep a field notebook to record the geology, ecology, & anthropology that you observe. For Ecology, you will be assigned a combination of field observations to record in real-time during different course activities and post-activity assignments to complete in your field notebook. Your notebook will be evaluated periodically for completion, clarity, detail, and connections you develop between and among course ideas.

Grading

Final course grades will be assigned based on the following:

- 45% Exams (4)
- 25% Lab projects (3)
- 15% Field notebook checks
- 5% Paper discussion participation
- 10% Participation & engagement in course activities

If you have a concern about a grade, please bring it to the instructor's attention within 3 calendar days of the assignment being returned.

Final grades will be assigned based on the UGA plus/minus scale below, without rounding.

A 94-100	B+ 87-89	C+ 77-79	D 65-69
A- 90-93	B 84-86	C 74-76	F 0-64
	B- 80-83	C- 70-73	

Extra credit: You can earn an extra 0.5% to functionally round your final ECOL grade by filling out each available Ecology course evaluation (via <https://webapps.franklin.uga.edu/evaluation/>).

Topical Outline

Since course content is taught in a place-based way, the order in which topics are covered will depend on our field travel schedule.

Core ecological principles: Organisms to ecosystems

- Organism adaptations and evolution
- Community dynamics: competition, food webs
- Thermodynamics and ecosystem energetics
- Disturbance and succession
- Biodiversity and ecosystem function
- Global change ecology
- Comparison of ecosystems across North America

Human-environment interactions across North America

- Effects of climate and resource availability on development patterns of past and current human populations and their cultures
- Legacies of human actions on ecosystems, including Native American habitation, European colonization and westward expansion, agricultural intensification, mining, urbanization, and future development
- Modern use of energy, mineral, water, soil, and vegetation resources, and their various impacts on ecological systems
- Environmental challenges facing various regions of the U.S.
- Current and future resource and environmental needs of the U.S. human population
- Strategies and policies to meet future resource demands sustainably

University policies & resources

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 submitted for this course must meet the standards described in the [Academic Honesty Policy](#).

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. All instances of suspected or potential academic dishonesty, including plagiarizing, lying, cheating, falsifying data, obtaining unauthorized assistance, stealing, or other forms of academic dishonesty detailed as [Prohibited Conduct](#) will be reported to the UGA Academic Honesty Office.

In addition to the types of Prohibited Conduct linked above, artificial intelligence-based technologies and tools such as ChatGPT may **not** be used for class activities unless specifically indicated. The use of AI tools to write assignment responses and/or disguise plagiarized work is considered unauthorized assistance and any suspected use of AI will be processed through Academic Honesty.

Please ask a course instructor for clarification **before** submitting your assignment if you ever have questions related to course assignments and the academic honesty policy.

Course Accommodations

If you are eligible for course accommodations, you must register with the Disability Resource Center (Clark Howell Hall; <https://drc.uga.edu>; 706-542-8719 [voice]; 706-542-8778 [TTY]). Upon receipt of your accommodations from DRC, we will work with you to make sure our course meets your needs. Please note that accommodations cannot be provided retroactively.

UGA Well-being Resources

UGA Well-being Resources promote student success by cultivating a culture that supports a more active, healthy, and engaged student community.

Anyone needing assistance is encouraged to contact Student Care & Outreach (SCO) in the Division of Student Affairs at 706-542-8479 or visit sco.uga.edu. Student Care & Outreach helps students navigate difficult circumstances by connecting them with the most appropriate resources or services. They also administer the Embark@UGA program which supports students experiencing, or who have experienced, homelessness, foster care, or housing insecurity.

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- Student Care and Outreach: sco.uga.edu
- University Health Center: healthcenter.uga.edu
- Counseling and Psychiatric Services: caps.uga.edu or CAPS 24/7 crisis support at 706-542-2273
- Health Promotion/ Fontaine Center: healthpromotion.uga.edu
- Disability Resource Center and Testing Services: drc.uga.edu

Additional information, including free digital well-being resources, can be accessed through the UGA app or by visiting <https://well-being.uga.edu>.

FERPA Notice

The Federal Family Educational Rights and Privacy Act (FERPA) grants students certain information privacy rights. To comply with [FERPA](https://ferpa.uga.edu), all communication that refers to individual students must be through a secure medium (UGAMail or eLC) or in person. Instructors are not allowed to respond to messages that refer to individual students or student progress in the course through non-UGA accounts, phone calls, or other types of electronic media.

Syllabus Disclaimer

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary. Any changes will be posted to eLC.



Ecology of North America (ECOL 4160-4160L) Summer 2024



Course Description:

Ecological survey of North American ecosystems taught in the field from coastal Georgia to southwest deserts and the Pacific Northwest. Application of ecological principles such as biodiversity and ecosystem function, climate change, disturbance, pollution, and trophic food web interactions. Consideration of human interaction with the environment, past, present, and future.

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Course Objectives:

This course is designed to give you a broad understanding of North American ecology, organismal adaptations, and human-environment interactions, specifically focusing on the continental United States (U.S.), including the Southeastern coast, desert Southwest, temperate rain forest of the Northwest, Intermountain West, and grasslands of the Great Plains.

Specifically, by taking this course, you will be able to:

- Explain basic ecological principles (e.g., biodiversity and ecosystem function, climate change, competition, disturbance, evolution, pollution, succession, thermodynamics/ecosystem energetics, and trophic food web interactions) and apply these concepts to visited field sites using a place-based lens;
- Compare and contrast the ecological systems in different regions, including how the abiotic environment shapes biotic communities and their adaptations;
- Appraise how the distribution of water, mineral, soil, and vegetation resources across the U.S. has shaped past and current human occupation of different ecosystems and affected human-environment interactions; and
- Apply your understanding of ecology to propose possible solutions to help mitigate current and future socio-ecological challenges.

Course Details

Credit

4 credits,
CRNs 71826 (lecture),
71827 (lab)

Prerequisites

ECOL 3500-3500L or
POD

Required resources

None

Primary format

Field Study;
In-person lecture + lab

Digital Course Pack:

You will be provided with a digital course pack that contains a variety of course materials, including readings from a variety of sources (peer-reviewed journals, popular press articles, book excerpts), selected podcasts, and short video clips. This course pack also includes maps and figures that provide helpful context as we travel. We will regularly announce assigned course content to review throughout the course and we expect you to carefully read/watch/listen to those materials and be prepared to discuss them by the dates specified.

Course Activities & Assessments

Our course assessments include a mixture of oral presentations and discussions, written exams, and practical exercises including field observations, field research projects, and related reports and presentations. Detailed descriptions and relevant grading guidelines for each assignment will be provided during class.

- **Exams:** We will have four closed-book exams during the semester. Exams are cumulative; we will be revising concepts throughout the course and making connections among the places we visit.
- **Projects:** You will be completing 3-4 lab projects during our trip. For each project you will collect class data, analyze the data, and turn in a brief written report. As enrollees in ECOL 4160L, you are expected to be team leaders during the data collection and analysis portion of the project and you will be evaluated on your organization of your team's field project data and analyses.
- **Oral presentation & Discussion lead:** You will co-lead two group discussions centered around a recent, peer-reviewed ecological research paper. For each discussion, we expect you to prepare a brief overview and summary of the scientific paper, have a set of prepared discussion questions and then lead the group in a discussion of the assigned reading.
- **Field Notebooks:** You will be required to keep a field notebook to record the geology, ecology, & anthropology that you observe. For Ecology, you will be assigned a combination of field observations to record in real-time during different course activities and post-activity assignments to complete in your field notebook. Your notebook will be evaluated periodically for completion, clarity, detail, and connections you develop between and among course ideas.

Grading

Course grades will be based on the following assignments and activities:

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- 5% Paper presentation & discussion lead (2)
- 10% Participation & engagement in course activities

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