

Global Change Ecology Syllabus
EEB461 – Fall 2017
CRN 50672

Instructor

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Office hours: Tu 8:00-9:00 & Th 13:30-14:30 (or by appointment)

Graduate Teaching Assistant

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Meeting Times

23-August to 05-December 2017

TTh 9:40 am - 10:55 Dabney-Buehler Hall 488

Course Summary

In Global Change Ecology you will learn about global-scale environmental changes and the consequences of these changes for species and ecological communities. This course will focus on topics such as climate change, biodiversity loss, land use change, and biological invasions. There will be a strong emphasis on understanding the process of science through reading and critical evaluation of the primary literature. We will discuss the effects of global changes on tropical versus temperate species and ecological communities, impacts on human health, and solutions to these challenges. By the end of this course, you will understand the major global changes and the factors that cause them. Your writing skills, creativity, and analytical and quantitative abilities will be reinforced and improved. My hope is that you leave this course as a more ecologically aware citizen with a deeper curiosity about how the world works.

Course Philosophy

With a continually increasing rate of global ecological changes, scientists must rapidly organize and synthesize information in ways that help them solve problems. This course focuses on developing skills to help you evaluate scientific literature and integrate information into a broader context. You will be expected to read primary literature articles before class so that you can fully participate in course discussions in a critical and constructive way.

Learning Objectives

Students successfully completing this course will be able to:

- (1) understand and make informed predictions of the ways in which plants, animals, and ecological communities respond to global change
- (2) enhance scientific communication skills
- (3) engage in critical thinking and discussion of primary literature in global change ecology
- (4) become familiar with the tools used to understand past and predict future responses to global changes

Classroom communication

Check the Canvas site and your email frequently. All of the readings, handouts and out-of-class assignments will be available on the site.

If you have a general question about the course, it should be posted to the course discussion board on Canvas. This way questions can be answered once and read by everyone. In addition, someone in the class may answer your question sooner, such as your peers or the TA.

For questions that are personal or specific to an individual, please contact the instructor via email. Please allow up to 2 working days for responses to emails. Email may not be answered after the workday is over or on the weekends, so please be patient outside of normal work hours.

Biology Study Rooms:

Hesler 417 is a quiet study room for majors in Biology; it can also be reserved for group study. Strong Hall 102 has a student resource center for printing, etc.

Readings

All readings will be made available on Canvas, and are required reading. **You must do the reading before coming to class.**

Participation and Involvement in Class

Your participation is critical for the success and quality of the course. To participate, you need to show up for lectures prepared for discussion, mentally engaged, energetic, and curious. The course will be more enjoyable and you will come away with great appreciation for the challenges surrounding global change ecology. When assigning grades, I will consider participation and involvement, especially for students who find themselves on the border between two grades.

Assessment

Assessment is an important part of the learning process. To assess what you understand and what you do not, and to see if you meet the course objectives, you will have in-class assignments, homework, pop quizzes, presentations, and exams. You will be assessed on the following:

Leading a Paper Discussion (15% of grade):

During the term you will lead a group discussion on a paper related to a global change issue we are covering in class. We will talk about the motivations, methods, results, and implications of the paper. You will put together a brief presentation introducing the paper to the class. The paper discussion will represent 15% of your overall grade (10% for the presentation, 5% for how well you lead the discussion). We will go over the presentation rubric and how to lead a discussion.

Participation in Discussions (21%):

By 5pm the day before a student led paper discussion, you will need to post 2 questions about the paper to the google form (link on Canvas). The form will close at 5pm, so make sure you do this on time. You can receive up to 2 points for each question. To receive 2 points, you must ask a thought-provoking question! Please avoid questions related to methods.

Climate Change Assignment (5%)

You will examine two climate change statements and come to class prepared to lead one of the statements and serve as back-up for to a peer for a second back-up.

Species Case Study (10%)

Students will select a species and investigate whether it has already responded to climate change and how the species is likely to respond in the future. Come to class prepared to present on the potential fate of the species. Will it move, acclimate, adapt, or face extinction?

Infographic (20%)

You will create an infographic on a topic in global change ecology. You will present this infographic to your peers in a poster session. Information will be provided at a later date.

Quizzes (9%)

Pop quizzes will happen during class and cannot be made up. The quizzes will cover the readings for the day. Each quiz will be worth 15pts.

Exams (20%)

You will have a mid-term exam and a final exam. Exams will focus on reasoning, problem solving, interpreting and creating graphs, and demonstrating an understanding of concepts. Only under very special circumstances will make-up exams be available and only if I am notified in advance of the scheduled exam date. They will be essay format only and must be taken within 5 days of the scheduled exam date.

Grade disputes

If you disagree with how an assignment or homework question was graded, you must come to me within one week of the day the assignment was returned (whether you picked it up or not that day). You must make an argument in writing for why you think you should receive more points. If your dispute is about an arithmetic mistake when points were being added together, you do not have to submit a written justification.

	% of grade	Points Possible
Discussion lead	15	75
Questions from readings / participation	21	105
Climate change hmwrk	5	25
Mid-term exam	10	50
Species Case Study	10	50
Pop quizzes	9	45
Infographic	20	100
Final exam	10	50
Total		500

Your grades will be based on the total points earned and the following scale. There is a chance the class will be curved, but this is generally not the case. Any curve will not hurt your grade.

A	93-100	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	0-59

Lecture Schedule

Date	Lecture
24-Aug	Introduction
29-Aug	Climate reconstructions
31-Aug	History of contemporary climate change
5-Sep	Discussion of climate change arguments
7-Sep	Projecting future climates/Climate novelty/Historic climates & responses
12-Sep	Thermal tolerances and stress
14-Sep	Temperate versus tropical impacts
19-Sep	Range shifts and models
21-Sep	Evolutionary responses
26-Sep	Will species adapt?
28-Sep	Phenological Change
3-Oct	Community changes
5-Oct	NO CLASS – FALL BREAK
10-Oct	Long-term resurveys
12-Oct	Present species case studies
17-Oct	Mid-term exam
19-Oct	Marine impacts
24-Oct	Agricultural impacts
26-Oct	Climate and disease
31-Oct	Invasion biology
2-Nov	Invasion biology
7-Nov	Habitat fragmentation
9-Nov	Habitat fragmentation
14-Nov	Pollution
16-Nov	Synthetic chemicals as global change agents
21-Nov	Infographics - Peer Review
23-Nov	NO CLASS - THANKSGIVING
28-Nov	Conservation
30-Nov	Infographics
5-Dec	Wrap-up
12-Dec	Final Exam: Tuesday, December 12, 8:00-10:00a

Sept 1 - Last day to drop without a “W”; Nov. 14 - Last Day to Drop with a “W” (WP/WF);
Dec. 5 - Last Day for a University Withdrawal

Disability Services

If you need course adaptations or accommodations because of a documented disability, or if you have questions or concerns about disabilities or emergency information to share, please contact the Student Disability Services: 100 Dunford Hall; 865-974-6087 or 865-622-6566 for video phone; Website: <http://sds.utk.edu/>.

Accessible Information, Materials, & Technology -- <http://accessibility.utk.edu/>

Counseling Center and Wellness

College is a stressful time. If you are feeling significant levels of stress or anxiety that have led to mood changes, depression, loss of appetite, problems sleeping, or you have experienced a problem with relationships, family worries, loss, or a personal struggle, please seek help from the counseling center. Getting help is a smart and courageous thing to do for yourself and for those who care about you. The *Student Counseling Center* is the university's primary facility for personal counseling, psychotherapy, and psychological outreach and consultation services.

Phone: **865 974-2196**

Email: counselingcenter@utk.edu

Website: <http://counselingcenter.utk.edu/>

Address: 1800 Volunteer Boulevard

The *Center for Health Education and Wellness* is dedicated to a community model that is embodied in the "VOLS HELP VOLS" commitment: *We are all Volunteers. We look out for each other.* The Center manages **974-HELP**, the **distressed student protocol**, **case management**, the **Sexual Assault Response Team**, and the **Threat Assessment Task Force**.

Website: <http://wellness.utk.edu/>

Emergency Alert System -- <http://safety.utk.edu/>

The University of Tennessee is committed to providing a safe environment to learn and work. When you are alerted to an emergency, please take appropriate action. Learn more about what to do in an emergency and sign up for [UT Alerts](#). Check the emergency posters near exits and elevators for building specific information. In the event of an emergency, the course schedule and assignments may be subject to change. If changes to graded activities are required, reasonable adjustments will be made, and you will be responsible for meeting revised deadlines.

Academic Assistance

Tutoring: The Division of Biology does not offer tutoring services. Contact the Student Success Center or the Academic Support Unit of the Office of Multicultural Student Life for information about tutoring opportunities.

Student Success Center: The comprehensive source for information, services, and resources to assist your success at UT:

Phone **865 974-6641**

Email: studentsuccess@utk.edu

Website: <http://studentsuccess.utk.edu>

Address: 812 Volunteer Boulevard, Greve Hall, room 324

Office of Multicultural Student Life:

Website: <http://multicultural.utk.edu/services/tutoring/>

University Civility Statement -- <http://civility.utk.edu/>

“Civility is genuine respect and regard for others: politeness, consideration, tact, good manners, gracious-ness, cordiality, affability, amiability and courteous-ness. Civility enhances academic freedom and integrity, and is a prerequisite to the free exchange of ideas and knowledge in the learning community. Our community consists of students, faculty, staff, alumni, and campus visitors. Community members affect each other’s well-being and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. Affirming the value of each member of the university community, the campus asks that all its members adhere to the principles of civility and community adopted by the campus.”

Academic integrity

Academic dishonesty of any sort will not be tolerated. Plagiarism includes the copying of phrases, portions of sentences or the main ideas from anyone or any work submitted for a grade (exams, papers, quizzes, etc).

http://catalog.utk.edu/content.php?catoid=1&navoid=156#hono_stat.

The official Honor Statement of students attending UTK is:

An essential feature of the University of Tennessee, Knoxville, is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the university, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.

Syllabus

This syllabus is subject to change throughout the course - see Canvas for the most up-to-date version.