

ENVS 169: Climate Change Ecology

Course Syllabus, Summer Session 2, 2015

Class meetings

M, W 1:00 – 4:30 pm, Natural Sciences Annex, room 102

Instructor

Dr. Catherine E. Wade

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Office: Interdisciplinary Sciences Building, room 449

Office hours: M 10:30 am – 12:30 pm and by appointment

Teaching Assistant

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Office hours: W 11:30 am – 12:30 pm (248-227-3206)

Course Description

The impacts of climate change integrate weather, biogeochemical, ecological, and physiological impacts on water, carbon, and nutrient cycling, and further effects on plants, animals and other organisms. The broad goal of this class is to delve into the effects that human-induced global changes are having on ecological systems and use this information to predict the how the structure and function of communities and ecosystems will be affected by future climate and atmospheric conditions. Within that framework, my goal is to help you understand:

1. The links between the physical, chemical, and biological systems on Earth, and why changes occur with human activities;
2. The methods and tools for analyzing past and predicting future responses to global change; and
3. The mechanisms by which plants, animals, and ecosystems are influenced by global change.

Course Website

I will post course announcements, readings, and assignments on eCommons (<http://ecommons.ucsc.edu>). Readings and assignments will be posted under the **Resources** section. Be sure to check your email regularly to keep up to date with the postings on eCommons; I will assume you have seen anything I post there.

Required Reading

There is no required text for the course. In addition to learning about climate change and ecology, you will be engaging directly with the primary literature. These required readings will be posted on the eCommons site. ***There may be pop quizzes in class about reading assignments!***

Responsibilities & Performance Evaluation

Your responsibilities include attending class meetings, handing in the assignments (complete and on time), completing class readings, and contributing to class discussions. You will get out of this class what you put into it.

Your grade will be based on the following course components:

- Midterm exam (25%)
- Final exam (35%)
- Assignments (25%)
- Class participation (14.5%)
- Course evaluations (0.5%)

Assignments are due at the beginning of class on their due date. Late assignments will receive a deduction of 25% per day (24 hours or portion thereof). Please anticipate printer or other common problems and allow time for them.

All work that you hand in must be your own. Even if you work in groups, you must present it in your own format. Do not hand in photocopies of assignments, papers, problem sets, tables, datasheets, graphs, or figures created by someone else. ***Make sure that any written text answers are in your own words, and not identical to those on anyone else's assignment from this or past years!*** Keep a copy of your assignments in a safe place in case you lose the original before you hand it in. Cheating and academic dishonesty of any kind will not be tolerated.

Academic Integrity

Academic integrity is the cornerstone of a university education. Academic dishonesty diminishes the University as an institution and all members of the University community. All members of the UCSC community have an explicit responsibility to foster an environment of trust, honesty, fairness, respect, and responsibility. All members of the university community are expected to present as their original work only that which is truly their own. All members of the community are expected to report observed instances of cheating, plagiarism, and other forms of academic dishonesty in order to ensure that the integrity of scholarship is valued and preserved at UCSC. In the event a student is found in violation of the UCSC Academic Integrity policy, he or she may face both academic sanctions imposed by the instructor of record and disciplinary sanctions imposed either by the provost of his or her college or the Academic Tribunal convened to hear the case. Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student's transcript.

Disability Resource Center

If you qualify for classroom accommodations because of a disability, please submit your accommodation authorization letter from the Disability Resource Center (DRC) to me as soon as possible, preferably within the first week of the summer session. **Contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu for more information.**

Important Dates

- Drop deadline:* Monday, August 3
- Withdraw deadline:* Friday, August 14
- Midterm exam:* Monday, August 10, in class (first half)
- Final exam:* Wednesday, August 26, in class

Course Schedule (tentative)

Date	Topic(s)	Readings/Assignments Due
Monday, July 27	Course introduction Elevated carbon dioxide, other greenhouse gases, climate and weather Biogeochemical cycles	
Wednesday, July 29	Paleoclimatology and past climate change Activity: Getting to the Core	Reading due: Petit et al. 1999
Monday, August 3	Overview of climate change impacts and projecting future climate Plant responses to climate change	Reading due: IPCC 2014 Shaw et al. 2002 McKee & Rooth 2008
Wednesday, August 5	Animal responses to climate change	Reading due: Younger et al. 2015 Assignment due: Getting to the Core
Monday, August 10	Midterm exam (1st half)	
Wednesday, August 12	Animal responses to climate change Ocean acidification and sea level rise Species range shifts and phenology Activity: Flower Power	Assignment due: Oceans of Acid Reading due: Inouye et al. 2000 Visser & Both 2005 Inouye 2008 McKinney et al. 2012
Monday, August 17	Invasive species Wildland fire	Reading due: Brooks et al. 2004 Rahel & Olden 2008 Westerling et al. 2006 Westerling & Bryant 2008
Wednesday, August 19	Agriculture	Assignment due: Flower Power
Monday, August 24	Biodiversity and extinction	Reading due: Sala et al. 2000 Butchart et al. 2010
Wednesday, August 26	Final exam	