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

Teaching Assistant
Earl Hidayetoglu  
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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)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic(s)</th>
<th>Readings/Assignments Due</th>
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| 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** | |

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