

Biology 490, Climate Change Biology, Fall 2012

Course overview

Faculty	Peter Zani, Ph.D.
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Office hours	11:00-11:45 MTWRF, if the door is open, or by appointment

Class Schedule

(This schedule is tentative)

Week	Date	Class Topic	Due Dates
1	Sept. 6	Introduction to Climate Change	
2	Sept. 13	Climate Modes	
3	Sept. 20	Geographic Variation	
4	Sept. 27	Trophic Effects	Sept 24 (Monday): Project Outlines (5pm)
5	Oct. 4	Seasonality	
6	Oct. 11	Student-Led Discussions I	
7	Oct. 18	Student-Led Discussions II	
8	Oct. 25	Student-Led Discussions III	Oct 22 (Monday): First Drafts (5pm)
9	Nov. 1	Student-Led Discussions IV	
10	Nov. 8	Student-Led Discussions V	
11	Nov. 15	Student-Led Discussions VI	
12	Nov. 22	Thanksgiving Break	Nov. 21 (Wednesday): Second Drafts (5pm)
13	Nov. 29	Project Presentations I	
14	Dec. 6	Project Presentations II	
15	Dec. 13	Project Presentations III	Dec. 14 (Friday): Final Drafts (5pm)

Course description

This course examines ecological patterns and outcomes of events such as the last ice age, explores effects of ongoing changes in terms of habitat alteration, migration, adaptation, and extinction, and attempts to predict consequences of future anthropogenic climate change for life on Earth. In addition to lectures and group discussions, students are required to read, discuss, and review scientific literature.

Course goals

Gain an appreciation of questions that biologists study in relationship to climate change, methods they use to study them, fundamental lessons that have been learned, and what remains unresolved.

Develop an understanding of the biological significance of climate change, and learn how theoretical predictions are applied in areas such as conservation, management, and environmental science.

Improve your ability to apply quantitative reasoning skills in the analysis/interpretation of scientific data.

Enhance your ability to organize and communicate your ideas to scientists and non-scientists alike.

Course readings

In this course we will discuss the relevant scientific literature, which I will provide prior to each class. A substantial portion of your grade depends on how well you read and discuss the material for this course. I expect you to keep up on readings AND to read them for content. Much of the scientific literature is highly technical and extremely dense. You will not do well in this class if you only spend a few minutes before class scanning the readings. Gaining a true understanding of a single paper may take several hours. My advice is that you sit down in a quiet spot and carefully read the paper, then come to class and ask questions about things you don't understand. Also, looking up words you do not understand can be critical for comprehension. However, be skeptical of what you read. Do the authors actually have the data to support their point? Take your time on the readings and take notes. What you DON'T understand can be a great topic for discussion and count positively toward your participation grade.

Course evaluation:

Your grade in this course will be based on the following components (totaling 165 pts):

Participation	50 pts (40 for contributing to discussions, 10 for leading discussions)
Research Outline	5 pts
First Draft	10 pts
Second Draft	20 pts
Final Draft	40 pts
Presentations	40 pts

Participation

Learning is inherently interactive (meaning I'm learning as well). Thus, class attendance and participation is expected. Participation includes your contribution to lectures and discussions of lecture topics and outside readings. Ask questions, make observations, engage! You can earn 40 points for contributing to discussions and 10 for leading discussions. Each student (as part of a pair) will lead a discussion this semester. For this latter assignment we will meet the week prior to your particular week to discuss what papers you might use. The week of your assignment you are expected to keep the conversation going by raising salient points or issues of concern pertaining to your topic.

Term Projects

You will choose a *biological* topic related to climate change, research that topic, and write a review of the implications and significance using the format of the journal "Global Change Biology". ***NOTE, you should follow this journal's style guidelines strictly.*** I expect you to approach this assignment as if you were writing a scientific review of an ecological issue for publication in the journal with your peers (classmates) performing the evaluation and me as editor. The project includes an outline of the areas to be researched, a draft to be edited by me, a second draft to be peer-edited (for which both your drafts and your reviews will be graded), and a final draft. The paper is limited to 12 double-spaced pages of text (title page, figures, and references are extra) and can ONLY consist of peer-reviewed literature (*no web sources allowed*).

Project Presentations

We will take three weeks near the end of the semester for you to present a brief overview of your research findings from the research project. There will be four of these each day, which means you have 9-10 minutes to summarize your research and 2-3 minutes to answer questions. Your grade on this assignment depends in part on how well you present the research, how thoroughly you cover the topic, how well you come to the 9-10 minute limit, and how well your presentation stimulates questions or discussion.

Final Grades

Your final grade is based on the percentage of points that you earn.

≥93% = A, ≥90% = A-, ≥87% = B+, ≥83% = B, ≥80% = B-, ≥77% = C+, ≥73% = C, ≥70% = C-, ≥67% = D+, ≥60% = D, <60% = F

In-Class Behavior

You are expected to be respectful & considerate of your fellow students' learning environment. In addition, you are expected to focus on the day's topics. Thus, certain electronic devices are considered by me to be distractions & not allowed in the classroom. Primary among these are cell phones & computers. *All cell phones* are to be silenced & put away during class. No texting, no calls, no exceptions (I may not say anything at the time, but you should expect your participation grade to be affected negatively if you violate these guidelines). There are to be no computers during class unless you have a documented learning disability that requires a laptop to take notes. You are not required to *agree* with every opinion expressed by me or your peers; in fact, healthy skepticism is to be expected of any good scientist. However, you should respect the right of others to hold different opinions & perhaps even learn from their viewpoints. You are encouraged to ask questions & participate in discussions where appropriate.

Disabilities

UWSP abides by interpretations of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973 that stipulates no student shall be denied the benefits of an education "solely by reason of a handicap." Disabilities covered by law include, but are not limited to, learning disabilities, hearing, sight, or mobility impairments, and other health related impairments. If you have a documented disability that may have some impact on your work in this class for which you may require accommodations, please see me during the first two weeks of the semester so that such accommodations may be arranged.

Academic Integrity

Plagiarism and cheating of any form are serious offenses and may result in an F for the assignment, the course, or expulsion from the university. The details of the UWSP Academic Integrity policy are found in the Student Handbook. It is your responsibility to read and understand the contents of that policy before you submit work to be graded. Questions regarding the policies and enforcement of the policies may be addressed to me during office hours.

Notification of Participation in College Sanctioned Events

Individuals who must miss a class to participate in a college-sanctioned event are expected to notify me in advance and complete the work, including tests, in advance. It is your responsibility to communicate with me in advance regarding absences and determine a schedule for make-up work.