

IDIS 297: Climate Crises: Past, Present and Future Fall Semester 2008



Instructors: Drs. Diane Husic and Hilde Binford
Course Meeting Times: Fridays, 12:45 – 3:45 p.m.

Office Hours:

Dr. Husic's Office Hours:

Tuesdays 10:00 – 11:30 a.m.
Thursdays 10:00 – 11:30 a.m.

Fridays 10:00 – 11:00 pm

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Dr. Binford's Office Hours:

Mondays 8:30 – 8:50 a.m.
& Wednesdays 10:00 – 12:00 a.m.
1:00 – 2:20 p.m.
Thursdays *By appointment*

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I. Course Description:

It's hard to deny the symptoms of global warming: the melting of the Arctic and Antarctic, the wide range of species that are already showing signs of adapting to climate change or survival difficulties, and the increase of extreme weather events. Going back in time, there have been a number of climate changes (warming and cooling); this course will look at past climate changes and study their impact on earlier civilizations (our prehistoric ancestors, the Norseman, Mayans, etc.). The retrospective will provide insights into natural causes and cycles associated with climate change and allow a comparative analysis with the impact that the Industrial Revolution and subsequent technological advancements have had on climate trends. Students will be provided with climate data, fossil records and other evidence that forms the scientific basis of global warming, ice ages, and shifts in precipitation patterns. Important for discussion will be the complex variables involved that make it difficult to predict with certainty what impact greenhouse gases have on climate and the precise impact that future climate change will be on different regions of the world. This interdisciplinary course will incorporate field trips, laboratory exercises and potentially guest lecturers to provide insights on the global warming phenomenon in the context of atmospheric chemistry and physics, environmental science, economics, politics, and the arts.

II. Instructional Materials:

Required text: Pearce, Fred (2007) With Speed and Violence. Why Scientists Fear Tipping Points in Climate Change, (Beacon Press, Boston).

Other readings and related videos will be available on reserve in Reeves library. A list of assigned and suggested readings will be provided as we go through the course.

III. Goals of the Course:

Students in the course will:

- gain experience in critically examining scientific evidence and media coverage of a complex scientific issue with vast social implication;
- examine the impact of climate change on past civilizations and determine whether there are lessons to be learned for our future;
- will contemplate ethical dilemmas associated with inaction or potential solutions to a global problem; and
- will work in a multidisciplinary framework.

IV. Teaching Strategies:

The course will incorporate a variety of teaching and learning experiences including:

- team teaching;
- a series of lectures and class discussions based on the reading assignments, audio-visual materials, and other supplemental materials presented by the instructors;
- small group activities
- opportunities for students to use a range of creative approaches for course projects and their personal action plans;
- laboratory experiences, inquiry-based exercises, and field trips; and
- guest speakers

V. Course Requirements:

Attendance is mandatory. For each unexcused absence, your overall grade for the class will be lowered by 0.25 (using a 4.0 scale). Excused absences include illness (doctor's note required) and family funeral (note from home or Student Services required). All other absences will be evaluated at the discretion of the instructor. Chronic lateness will not be tolerated, and will be reflected in the overall grade.

Assignments must be turned in either at the beginning of class or by 4 p.m. on the day they are due (depending on instructions given for a particular assignment) in order to receive a letter grade. Assignments not turned in by that time will receive a "zero."

Preparation for and participation in class discussions is a must.

We are planning for this course to be "carbon neutral" and thus, expect students to participate in activities that will reduce the carbon footprint of this course. Details will be provided in the class.

We expect all students to keep a journal for the duration of the course. It is a good idea to be aware of stories in the media that relate to the topics we are covering. The internet can be a valuable resource as well, but you have to critically evaluate the content and source of the information that you find there. Often, timely stories break in the news that warrant out consideration in class, and your familiarity with media coverage of science and environmental issues can (and will) provide the basis for class discussions. Active participation in these discussions will be noted and will have a positive effect on your final grade for the course. We want you to determine the specific format and style of your journal but please date your entries and include the source of your information (e.g. which newspaper and what date, what magazine, edition and page number, the URL of a website, etc.). The journal should also be used for your personal reflections on what we are discussing in class, and consider how the topics apply the "real world" Prior to your submission of the completed journal at the end of the semester, we will ask you to summarize what you have learned from keeping such a journal and what trends or major issues you noticed throughout the semester.

VI. Academic Honesty:

Students are expected to uphold the standards of academic honesty, as they are spelled out in the Student Handbook.

VII. Exams, Research Paper, Assignment and Debates:

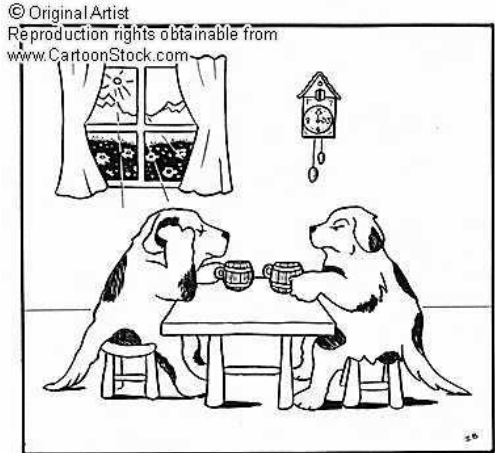
Midterm/Final: The midterm and final exam (**25% each for a total of 50%**) will include short essay responses.

Projects: (30% of the grade) Projects will include a debate on coal plants, GIS modeling for the future, case studies from businesses "going green", and participation in an energy audit and activities aimed at reducing the carbon footprint of the course.

Class Participation, Journal, Participation in Lab Activities and Short Assignments: (20% of the grade) There will be opportunities for discussion on most days. Students are expected to contribute to discussions and to participate fully in class activities. Students are also expected to keep a journal for their class notes, reflections on readings, and reflections on related media items for the duration of the course. The assignments will be important for the course discussions.

VIII. Special Needs/Accommodations:

Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the Learning Services Office as soon as possible to enhance the likelihood that such accommodations are implemented in a timely fashion.



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ST. BERNARDS, UNEMPLOYED DUE TO THE GREENHOUSE EFFECT.



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IX. Preliminary Schedule for the Class (subject to change)

- Week #1:**
8/29/08 Overview of Course; Pre-assessment of students current views on climate change and its potential impact on society
An Inconvenient Truth slideshow (after opening discussion)
- Week #2:**
9/5/08 Paleoclimatology and past climate crises (assigned readings)
Discussion of assigned readings: What can be learned from looking back in history?
Student reports: Climate Timeline Assignment
- Week #3**
9/12/08 Discussion on readings from With Speed and Violence (assigned chapters) and other readings (e.g. Ruddiman)
IPPC reports (to be read for week #4)
Pascal's Wager applied to climate change
Introduce climate modeling
- Week #4**
9/19/08 LAB activities: The science of global warming
Evaluation of scientific consensus and dissenters (assigned readings, previous class discussions and scientific demonstrations)
- Week #5**
9/25/08 **Guest speaker: Colette Palamar, Antioch College**
2:30 – 4 Special session with Moravian College students
7:00 – public talk: "Art as Activism: Education Without Confrontation:
- 9/26/08** Prepare for Coal Plant Debate (Give assignments)
Water Issues – Availability of fresh water around the globe; Floods, droughts and pending water crises: the U.S. Southwest as a case study;
The impact of climate change on the availability of water;
Preparation for week #6 guest speaker/class discussion – Legislation under consideration
- Week #6:**
10/3/08 Guest speaker – policy issues
Class discussion
- Week #7**
10/10/08 Coal Plant Hearings
Introduction to the topic of "Climate change, the media and the arts – how the art community is responding); Assignment: Using art to explore climate change
Discuss Moravian College exhibit of Colette Palamar's work: "ecologies"
Politics of Climate Change (movie: Hot Politics)
- Week #8:**
10/17/08 **Mid-term EXAM**
Carbon-neutral discussion/determining your carbon and ecological footprints
- Week #9**
10/23/08 **Guest speaker: Scott Weidensaul** (nature writer, naturalist, field researcher)
2:30 – 4 Special session with Moravian College students
7:00 – public talk: Title TBD
(Note: Scott is very interested in the impact of climate change on bird populations, migration patterns and indigenous peoples, especially near the Arctic Circle)
- 10/24/08** Overview of potential solutions for decreasing carbon emissions
LAB: Climate modeling
- Week #10**
10/31/08 Climate Wedge Game
Discussion on Speed and Violence readings;
LAB: Climate modeling – extracting data and analysis

Week #11: Introduction to the business community response to climate change
11/7/08 Carbon Neutral Exposé and LAB: Becoming carbon neutral; calculating carbon footprints

11/9/08 **Field trip: “Global Warming: Making the Transition to a Just and Sustainable World”**
Sponsors: PennFuture and Beth David Reform Congregation
Cosponsor: Pa. Interfaith Climate Change Campaign
Time: 2:30PM to 6:00PM (plus driving time to Gladwyne, PA)

Week #12: Debrief field trip to PennFuture Symposium
11/14/08 Business case studies: Presentations (“All in a day’s work”)
Campus Greenhouse Gas Inventory

Week #13: “6 Degrees” video
11/21/08 Reading: “Why Bother?” – Discussion
Class Carbon-neutral project
Cool Colleges – what can Moravian do?
Developing ideas for the teach-in for spring '09?

Week #14: The Future: discussion on readings; Evaluation of “Day After Tomorrow”, more of “6
12/5/08 Degrees” (National Geographic special)
Art/media presentations

Final **EXAM and final evaluations**
12/18/08
8:30 a.m.

