

IDIS 297/ENVR 297: Climate Crises: Past, Present and Future Fall Semester 2012

Instructors: Drs. Diane Husic and Hilde Binford

Course Meeting Times: Fridays, 12:45 – 3:45 p.m.

Office Hours:

Dr. Husic's Office Hours:

Mondays 10:00 – 11:00 am; 2:00 – 3:00 pm

Wednesdays 11:00 – noon

Thursdays 2:00 – 3:00 pm

By appointment at other times

Collier Hall of Science 311

Phone: 610-625-7100

Email: dhusic@moravian.edu

Dr. Binford's Office Hours:

Mondays through Thursdays

10:00 – 11:45 am.

By appointment at other times

Brethren's House 302

Phone: 610-861-1691

Email: hbinford@moravian.edu

I. Course Description:

It's hard to deny the symptoms of global warming: the melting of the Arctic and Antarctic, receding glaciers, the wide range of species that are already showing signs of adapting to climate change or that are in decline, 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 Agricultural and Industrial Revolutions, along with 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 dramatic shifts in precipitation patterns. Important for discussion will be the complex variables involved that make it difficult to predict with certainty what impact atmospheric greenhouse gases and human activities 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, readings, and potential guest lecturers to provide a wide range of insights on the global warming phenomenon from the perspectives of paleoclimatology, atmospheric chemistry and physics, ecology, geography, economics, political science, national and international policy, and the arts.



II. Instructional Materials:

Required texts:

- Pearce, Fred (2007) *With Speed and Violence. Why Scientists Fear Tipping Points in Climate Change*, (Beacon Press, Boston).
- Parenti, Christian (2011) *Tropic of Chaos: Climate Change and the New Geography of Violence* (Nation Books, New York).

Other readings and related videos will be available on BlackBoard or on reserve in Reeves library. A list of assigned and suggested readings and other resources will be provided weekly as we go through the semester.

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;
- contemplate ethical dilemmas associated with both inaction and potential solutions to a global problem and examine how societies respond (or don't) to issues that are framed by uncertainty and controversy;
- have a clearer concept of sustainability; and
- work in an interdisciplinary 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, student presentations, 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 and family funeral (with appropriate documentation). We recognize other legitimate excused absences such as when students are representing the university in an official capacity (e.g. for presentation at scientific meetings, intercollegiate athletic competition, but not practice, off-campus music performances, etc.). Such activities are scheduled ahead of time; thus, we expect you to make arrangements with us ahead of time as well. All other absences will be evaluated at the discretion of the instructor.

Students who arrive late to class disrupt the flow of the session and distract their peers. 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 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. Please complete assigned readings *before* coming to class.

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 actively participate through the course blog that has been set up for the course: <http://idis297.blogspot.com/> (Note that this has been idle since the last time we taught 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 and for contributing to the blog postings. Active participation in these discussions (in class and online) will be noted and will have a positive effect on your final grade for the course. The blog can be used for your personal reflections on what we are discussing in class, or reactions to things that others post. Please be professional in your postings. At the end of the semester, we will ask you to summarize what you have learned from participating in the blog and what trends or major issues you noticed on the blog throughout the semester.

VI. Academic Honesty: Students are responsible for adhering to the College’s policy on academic honesty; Moravian College expects its students to perform their academic work honestly and fairly. A Moravian student, moreover, should neither hinder nor unfairly assist the efforts of other students to complete their work successfully. This policy of academic integrity is the foundation on which learning at Moravian is built. Students will be held to the highest standards as specified by the Moravian College Honor Code. Violations of this code will be handled in the most severe manner allowed by college policy. Please read the **Academic Honesty Policy** that is included in the student handbook *and* the Guidelines for Honesty included in this syllabus. If you have any questions about plagiarism or other forms of academic dishonesty, please ask.

- All work that you submit or present as part of course assignments or requirements must be your original work. This includes any work presented, be it in written, oral, or electronic form or in any other technical or artistic medium. When you use the specific thoughts, ideas, writings, or expressions of another person, you must accompany each instance of use with some form of attribution to the source. Direct quotes from any source (including the Internet) must be placed in quotation marks (or otherwise marked appropriately) and accompanied by proper citation, following the preferred bibliographic conventions of your department or instructor. Student ignorance of bibliographic convention and citation procedures is not a valid excuse for having committed plagiarism.
- You may not use writing or research that is obtained from a “paper service” or that is purchased from any person or entity, unless you fully disclose such activity to the instructor and are given express permission.

- You may not use writing or research obtained from any other student previously or currently enrolled at Moravian or elsewhere or from the files of any student organization, such as fraternity or sorority files, unless you are expressly permitted to do so by the instructor.
- You may not collaborate during an in-class examination and you may not work with others on out-of-class assignments or projects unless expressly allowed or instructed to do so by the course instructor. If you have any reservations about your role in working on any out-of-class assignments, you must consult with your course instructor.
- Cheating or plagiarism will not be tolerated and may result in failure of the course. A major form of academic dishonesty is plagiarism, which we define as the use, whether deliberate or not, of any outside source without proper acknowledgment; an “outside source” is defined as any work (published or unpublished), composed, written, or created by any person other than the student who submitted the work (adapted from Napolitano vs. Princeton). Instructors often encourage—and in the case of research essays, require—students to include the ideas of others in their writing. In such cases, students must take care to cite the sources of these ideas correctly (in other words, to give credit where credit is due). Several assignments in this class will involve the use of internet resources, and it is my experience that students often do not realize that copyright violations and plagiarism policies still apply when using materials from these resources.
- At Moravian, if an instructor suspects that plagiarism has occurred, the student will be asked to show the notes and drafts contributing to the final version of a paper or assignment. The instructor also has the right to review any books or periodicals that were used. The grade for the paper will be suspended until these materials have been reviewed. An instructor who suspects a student of violating the policy on academic honesty with regard to an assignment, requirement, examination, test, or quiz will consult with another faculty member in the department using a blind copy of the work in question, to verify the violation. If the charge is verified, the instructor will, in almost all cases, assign either a grade of zero to the academic work in question or a failing grade in the course in which the violation occurred. The student must be informed in writing of the alleged violation and penalty; a copy of this memo must be sent to the Associate Dean of Academic Affairs.
- A student may appeal either a charge of academic dishonesty or a penalty as follows:
 - First, to the First Year Seminar course instructor.
 - Next, in the case of a First Year Seminar, to the Chair, First Year Seminar
 - Next, to the Academic Standards Committee, chaired by the Associate Dean for Academic Affairs.

VII. Learning Services Office:

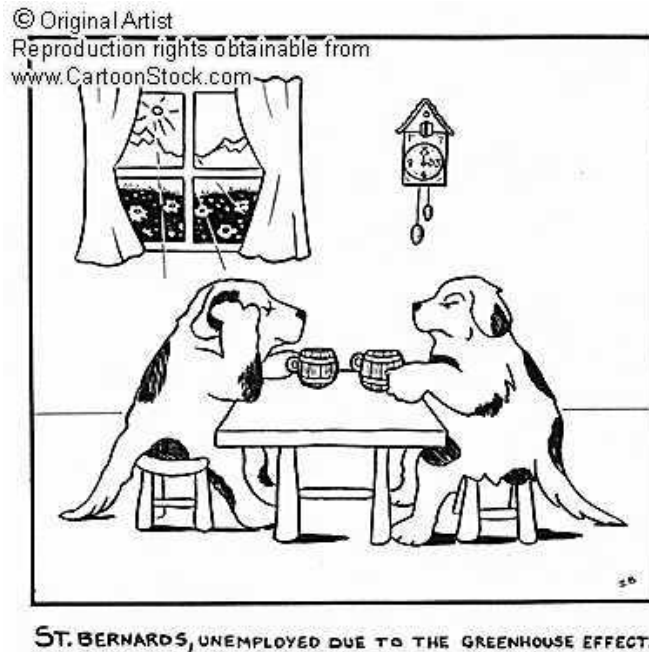
Students who wish to request accommodations in this class for a disability should contact Elaine Mara, assistant director of learning services for academic and disability support at 1307 Main Street, or by calling 610-861-1510. Accommodations cannot be provided until authorization is received from the Academic Support Center.

VIII. 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 such things as 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, Blog contributions, 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.



IX. Topics to be covered and a preliminary schedule for the Class (subject to change).

Note: Detailed outlines of class topics, readings, assignments, and resources will be posted on Blackboard each week.

- Week #1:** Introductions
8/31/12 Overview of course content and expectations; an overview of the semester
Discussion of possible field trips, special activities, available resources, etc.;
Links between course theme and sustainability (the In Focus theme for 2012-13)
Current student views on climate change and its potential impact on society
Introductory comments
Climate Realty Project presentation – an overview of the issues
- Week #2:** The ozone layer issues vs. the greenhouse effect
9/7/12 Paleoclimatology and past climate crises – the impact on past civilizations
Discussion of assigned readings: What can be learned from looking back in history?
An introduction to the UNFCCC history and processes; the Kyoto Protocol, the role of the IPCC and some key reports
- 9/13/12** Required attendance: Convocation: Winona LaDuke “Building a Green Economy: Indigenous Strategies for a Sustainable Future
Optional: 2:30 p.m. informal “class” with guest speaker (Dana Lecture Hall)
- Week #3** Discussion on assigned readings and about the convocation
9/14/12 Key findings from IPCC reports – predictions for communities around the world; including indigenous peoples and cultures
Some skepticism
Pascal’s Wager applied to climate change
The concept of Tipping Points and Feedbacks
- 9/20/12** Environmental film: *Green Fire* (A documentary on Aldo Leopold and the Land Ethic)
- Week #4** Discussion: Implications of the Land Ethic and Global Climate Change
9/21/12 The science of climate change
The ecological impact of climate change
Carbon/ecological footprints
An introduction to climate modeling
Sea level rise; ocean acidification, floods and droughts
Adaptation and resilience
- Week #5** Field trip: Nurture Nature Center in Easton
9/28/12 Climate change art
Science on a Sphere: Rising Waters
Group discussion

Week #6 10/5/12	Midterm exam Introduce artistic responses (How the artist's community is responding, semester project) Introduce "Story Corp" project Discuss carbon neutral possibilities Discussion on assigned readings
10/11/12	Environmental film: <i>Living Downstream</i> (A documentary based on Sandra Steingraber's book – the 2012 common reading)
Week #7 10/12/12	Climate change and health Climate justice issues The politics of climate change Foreign policy and national security issues associated with a changing climate
Week #8 10/19/12	Introduce Mock Debate assignment and expectations Climate games and role playing The Skeptics arguments and proposals The Heartland Institute
Week #9 10/26/12	Carbon-neutral discussions/actions Overview of potential solutions for decreasing carbon emissions Discussion of assigned readings
Week #10 11/2/12	Mock Debate
Week #11 11/9/12	Sustainability and climate change Local solutions Green business models Sustainable development
11/12/12	Environmental film: <i>Journey of the Universe</i> (with guest speakers/executive producers)
Week #12 11/16/12	Coal Plant Hearings Energy issues and alternatives Discussion of assigned readings
11/23/12	No class: Happy Thanksgiving
Week #13 11/30/12	UNFCCC in session – COP18 (11/26 – 12/7): International climate policy Media: climate change reporting Climate change activism
Week #14 12/7/12	Story Corp/Climate Reality Project Outcomes of COP18 Final discussion on lessons learned, the future of the planet, and what forms of communication/action are needed moving forward. Distribute take-home final

Final Exam Artistic presentations
Period Submit take home final
TBD Tentatively scheduled for December 13th at 8:30 am, but due to the scheduling of this class, there may be conflicts.



Environmental Film Series

Fall 2012

Refreshments and an opportunity for discussion will follow each film.

Green Fire: Aldo Leopold and a Land Ethic for our Time

Thursday, September 20 at 7:00 PM in the UBC Room

The first full-length documentary film ever made about legendary environmentalist Aldo Leopold, GREEN FIRE highlights Leopold's extraordinary career, tracing how he shaped and influenced the modern environmental movement. Leopold remains relevant today, inspiring projects all over the country that connect people and land. *Sponsored by the Moravian College Environmental Studies & Sciences Program through a grant from the Margaret A. Cargill Foundation.* Check out the trailer at: <http://vimeo.com/8669977>

Living Downstream

Thursday, October 11 at 7:00 PM in the UBC Room.

(Sandra Steingraber will be our speaker for the incoming first-year students.) Based on the acclaimed book by ecologist and cancer survivor Sandra Steingraber, Ph.D., LIVING DOWNSTREAM is an eloquent and cinematic documentary film. This poetic film follows Sandra during one pivotal year as she travels across North America, working to break the silence about cancer and its environmental links. After a routine cancer screening, Sandra receives some worrying results and is thrust into a period of medical uncertainty. Thus, we begin two journeys with Sandra: her private struggles with cancer and her public quest to bring attention to the urgent human rights issue of cancer prevention. But Sandra is not the only one who is on a journey—the chemicals against which she is fighting are also on the move. We follow these invisible toxins as they migrate to some of the most beautiful places in North America. We see how these chemicals enter our bodies and how, once inside, scientists believe they may be working to cause cancer. *Sponsored by the Moravian College Environmental Studies & Sciences Program through a grant from the Margaret A. Cargill Foundation.* Check out the trailer at: <http://www.livingdownstream.com/trailer>.

Journey of the Universe (with guest speakers: M. E. Tucker and John Grim)

Wednesday, November 7 at 7:30 PM in Dana Lecture Hall

JOURNEY OF THE UNIVERSE presents for the first time the epic story of cosmic, Earth, and human transformation. Beautifully filmed on the Greek island of Samos, this engaging narrative combines scientific discoveries in astronomy, geology, biology, and ecology with humanistic insights concerning the nature of the cosmos. *These speakers and the film viewing are sponsored by the Religion Department, Seminary, and Arts & Lectures.* Check out the trailer at: <http://www.journeyoftheuniverse.org/film-trailer/>