**EENV:242 CLIMATE AND GLOBAL CHANGE**

**FALL 2011 SYLLABUS**

Lecture: MWF 10:00-11:05, NSB128A

Lab: Monday 1-4, NSB133

**Instructor:** Dr. Katherine Straub (NSB111E, 372-4318, straubk@susqu.edu)

**Office hours:** MWF 11-12, or by appointment. I work half time, and am on campus all day on Mondays and Wednesdays, as well as Friday mornings (8-12). I can be reached by email on other days.

**Objective:** The objective of this course is to analyze the issue of global warming from multiple perspectives, with a particular emphasis on critical reading and writing skills. The first half of the course focuses on the science of climate change and its representation in both peer-reviewed and popular literature. The second half of the course focuses on predictions of future climate change and possible responses, from international policies to individual actions. Guest speakers include experts in political science, economics, religion, and carbon policy.

**Required texts:**

* *The Rough Guide to Climate Change*, Robert Henson (3rd edition, 2011)
* *Field Notes from a Catastrophe: Man, Nature, and Climate Change*, Elizabeth Kolbert (2006)
* *The Science and Politics of Global Climate Change: A Guide to the Debate*, Andrew E. Dessler and Edward A. Parson (2nd edition, 2010)
* *State of Fear*, Michael Crichton (2004)

**Grading:**

Short papers 30%

Term paper 20% (15% draft, 5% final)

Labs 15%

Quizzes 20%

Class discussions 15%

Midterm grades will be calculated according to the above percentages, based on work that has been graded during the first seven weeks of class.

**Graded components of the course:**

1. **Short papers:** Short papers will be assigned on Mondays, and will be due on the following Monday, so that they may be graded before class discussion on Friday. Papers should be 2-3 pages of typed, double-spaced text, not including figures or references. Separate handouts detail these assignments and the grading scale more thoroughly.
2. **Term paper:** A term paper of no more than 10 typed pages, not including figures or references, is required. A choice of term paper topics will be given.
3. **Labs:** Attendance at lab is mandatory. Some labs will require that written work be handed in during lab period; others will require the submission of a short response paper by the following lab meeting. Graded discussions will occur after each film (see #5).
4. **Quizzes:** There will be 6 announced quizzes during the semester. There is no midterm and no final exam.
5. **Discussions:** Class discussions occur frequently in this course. These discussions will each be graded on a 10 point scale. If you choose not to participate, you will receive a 0; if you participate and make thoughtful references to the readings and/or papers being discussed, you will receive a 10.

**Note:** Assignments must be submitted electronically before class on the day they are due, and a paper copy must also be turned in during class. Assignments submitted after the due date will not be accepted.

**Use of turnitin.com:** To prevent plagiarism, students will be required to submit papers through turnitin.com. To enroll, go to [www.turnitin.com](http://www.turnitin.com) and click on “Create Account” in the upper right hand corner. Click on “student,” then enter the class ID (4213171) and class enrollment password (climate). Enroll yourself with a password of your choice. Instructions for submitting a paper will be given during class.

**Grading scale:**

A 93-100 C+ 77-79 D- 60-62

A- 90-92 C 73-76 F <60

B+ 87-89 C- 70-72

B 83-86 D+ 67-69 Grades are not curved.

B- 80-82 D 63-66

**Attendance policy:** The attendance policy for this class is based on the standards established by Susquehanna University and described in the Student Handbook. After 3 class absences, the student will be given a warning. After 6 class absences, the student will be given a failing grade for the semester. Lab attendance is mandatory.

**Collaboration on labs and assignments:** Students are expected to adhere to the standards on academic honesty described in the Student Handbook. Cases of plagiarism will be reported. While collaboration on assignments is acceptable and encouraged, the work you hand in should be your own.

**Statement on students with disabilities:** If you have a disability that affects your participation or performance in the lecture, lab, or exams, please notify me as soon as possible. The disability must be documented so that we may work to provide you with the appropriate teaching aids, help, and time you may require.

**EENV:242 CLIMATE AND GLOBAL CHANGE**

**FALL 2011 SYLLABUS**

|  |  |  |
| --- | --- | --- |
| **DATE** | **CLASS TOPIC** | **READING** |
|  |  |  |
| Aug. 29 | Introduction; pretest |  |
| Aug. 31 | The “consensus” view of climate change; observations of T and CO2 | \*RG: 23-35; FN: Ch. 2 |
| Sep. 2 | “Nora and Sam” discussion; library research |  |
| *Lab* | *Short paper instructions; intro to library research* |  |
|  |  |  |
| Sep. 5\*\* | The physics of global warming | GCC: 7-16 (top) |
| Sep. 7 | GHG sources and sinks | RG: 27-30, 36-48 |
| Sep. 9 | Quiz 1; Short paper discussion |  |
| *Lab* | *Film: An Inconvenient Truth* |  |
|  |  |  |
| Sep. 12 | Sources of climate data | GCC: 61-81; RG: 189-211 |
| Sep. 14 | Sources of climate data | FN: Chapters 1 and 3 |
| Sep. 16 | “Hockey stick” plot discussion | GCC: 31-46, 55-59; RG 239-248 |
| *Lab* | *Film: The Day After Tomorrow* |  |
|  |  |  |
| Sep. 19\*\* | Climate forcing, response, feedbacks, sensitivity | Ruddiman Ch. 1 |
| Sep. 21 | Natural vs. anthropogenic climate change | GCC: 81-91; Ruddiman article |
| Sep. 23 | Quiz 2; Short paper discussion |  |
| *Lab* | *Film: The Great Global Warming Swindle* |  |
|  |  |  |
| Sep. 26 | The “long view” of climate | RG: 212-248 |
| Sep. 28 | Recent climate history: Ice, Oceans | RG: 82-127, 131-135 (top) |
| Sep. 30 | Recent climate history: Heat, floods and droughts, agriculture | RG: 51-81, 162-186 |
| *Lab* | *Library research (meet at library)* |  |
|  |  |  |
| Oct. 3 | Discussion: *State of Fear* | SF: 83-91; 187-196; 244-249; 366-388 (paperback 91-100; 208-218; 270-276; 404-427) |
| Oct. 5 | Discussion: *State of Fear* | SF: 420-427; 451-460; 477-489; Author’s message; Appendix I (paperback 462-470; 496-506; 524-537; Author’s message; Appendix I) |
| Oct. 7 | “Skeptic” arguments; **BIBLIOGRAPHIES DUE** | RG: 269-297; GCC: 46-55, 102-109 |
| *Lab* | *Film: The 11th Hour* |  |
|  |  |  |
| Oct. 10\*\* | “Unstoppable Global Warming” | UGW Prologue and Introduction |
| Oct. 12 | Recap of IPCC findings on observed climate change |  |
| Oct. 14 | Quiz 3; Short paper discussion |  |
| *Lab* | *Film: Cool It* |  |

\* RG = *The Rough Guide to Climate Change;* GCC = *The Science and Politics of Global Climate Change*; FN = *Field Notes from a Catastrophe*; SF = *State of Fear*

\*\* Short paper due

|  |  |  |
| --- | --- | --- |
| Oct. 17 | NO CLASS – FALL BREAK |  |
| Oct. 19 | Predictions: The Very, Very Simple Climate Model | McKibben (2010) |
| Oct. 21 | Predictions: IPCC Scenarios | GCC: 91-96; Ryerson (2010)  |
| *Lab* | *NO LAB – FALL BREAK* |  |
|  |  |  |
| Oct. 24\*\* | Predictions: Climate modeling | FN: Ch. 5; RG: 249-265; GCC: 16-22 |
| Oct. 26 | Predictions: Stabilization scenarios | RG: 298-302; GCC: 120-126 |
| Oct. 28 | Quiz 4; Short paper discussion |  |
| *Lab* | *Predictions computer exercise* |  |
|  |  |  |
|  |  |  |
| Oct. 31 | Responses: Mitigation, adaptation, and geoengineering | GCC: 126-133, 155-157; RG 359-362 |
| Nov. 2 | Stabilization wedges | Pacala and Socolow (2004); RG: 302-305; FN Ch. 7 |
| Nov. 4 | Ozone hole |  |
| *Lab* | *Film: Dimming the Sun* |  |
|  |  |  |
| Nov. 7\*\* | Kyoto Protocol | GCC: 22-29; FN: Ch. 6; RG 306-316 |
| Nov. 9 | Kyoto Protocol | GCC: 160-166; FN Ch. 8 |
| Nov. 11 | Quiz 5; Short paper discussion |  |
| *Lab* | *Kyoto Protocol negotiations* |  |
|  |  |  |
| Nov. 14 | Future of Kyoto | RG:316-323; GCC: 166-179 |
| Nov. 16 | U.S. climate change policies; *Mass. vs. EPA*;**TERM PAPERS DUE** | Doran and Ginnochio (2008) |
| Nov. 18 | Guest speaker: Dr. Nancy Harris, Winrock International |  |
| *Lab* | *Film: Heat* |  |
|  |  |  |
| Nov. 21 | State and regional climate change policies | Doran (2006) |
| Nov. 23 | NO CLASS – THANKSGIVING BREAK |  |
| Nov. 25 | NO CLASS – THANKSGIVING BREAK |  |
| *Lab* | *Film: The Big Energy Gamble* |  |
|  |  |  |
| Nov. 28 | Economics of climate change | GCC: 133-139 |
| Nov. 30 | Stern Review | Stern Review (2006) executive summary |
| Dec. 2 | Guest speaker: Dr. Tom Martin, Department of Religion |  |
| *Lab* | *Guest speaker: Dr. Matt Rousu, Department of Economics (2:00)* |  |
|  |  |  |
| Dec. 5 | Renewable and alternative energy sources | RG:332-359 |
| Dec. 7 | Renewable and alternative energy sources |  |
| Dec. 9 | Quiz 6; Posttest; **FINAL PAPERS DUE** | FN: Ch. 10 |
| *Lab* | *Film: Carbon Nation* |  |