

L&S 70B: GLOBAL WARMING

Instructors: Professors Nathan Sayre and John Chiang
GSI: Julie Klinger, Nathan McClintock, and Mary Whelan

105 North Gate Hall, Tuesday-Thursday 11:00a-12:30p

Sections: T 10-11a, W 10-11a, W 2-3p, Th 8-9a, Th 4-5p, F 9-10a

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This course examines global warming as both a geophysical and social issue. We will introduce the physical science that explains the problem, from the basic concepts of climate (carbon cycle, greenhouse effect, climate feedbacks) through to the models that project future climate changes and their impacts. Social scientific perspectives will cover the history of climate science, the geographical and political-economic implications of fossil fuels for industrial production, and the regulatory and ethical challenges posed by the current and prospective impacts of global warming. Because this is a fast-evolving subject, we have invited experts to give in-depth reviews of specific topical issues. This year's guest topics include: Economics of Climate Change; Verifying Climate Treaties; Campus initiatives on climate protection and sustainability. We aim to provide students with a solid understanding and information base with which to analyze and evaluate ongoing developments and debates surrounding climate change.

Course Requirements (grade weights subject to change)

1. Section (15% of final grade): This portion of the grade will be determined by section attendance and participation, and homework assignments.
2. Paper (20%): a 6-8 page (double-spaced) final paper due by week 14 of class (see below)
3. Two Midterms (20% each): in lecture, Mar 1 and Apr 14.
4. Final (25%): TBA

NOTE: All five components must be completed to receive a passing grade.

Readings

1. Weart, Spencer. 2008. The Discovery of Global Warming (revised and expanded edition). Harvard University Press (paperback).
2. Required Course Reader (items in reader marked with **CR** in the syllabus) will be available at the start of the semester at Copy Central North Side, 2483 Hearst Avenue. Tel: 510.849.9600.
3. Additional readings and lecture supplements will be made available on b-space

Paper

The paper is intended to help you learn both (1) skills for conducting scholarly research, and (2) details about a global warming-related topic of your choice. Early in the semester, we will ask you to identify a potential topic, and compile an introductory paragraph and list of sources. Further details will be provided in section.

Contact details

Instructor/GSI	Office Location	Office hrs	Email
John Chiang	547 McCone	W 9a-11a	jchiang@atmos.berkeley.edu
Nathan Sayre	589 McCone	W 2p-4p	nsayre@berkeley.edu
Julie Klinger	583 McCone	Th 1:30p-3p or appt	julieklinger@berkeley.edu
Nathan McClintock	199 McCone	T 1p-3p	mcclintock@berkeley.edu
Mary Whelan	583 McCone	Th 10a-11a, Th 2p-3p	mary.whelan@gmail.com

Course website

The course website can be accessed through bspace: <http://bspace.berkeley.edu>. You will find lecture slides posted here by midnight the night before each lecture; we will also occasionally post readings, topical articles, or other resources here. Please familiarize yourself with the site early in the semester: log on using your CalNet ID and passphrase.

Academic Integrity

Any test, paper, report or homework submitted under your name is presumed to be your own original work that has not previously been submitted for credit in another course. All words and ideas written by other people must be properly attributed: fully identified as to source and the extent of your use of their work. Cheating, plagiarism and other academic misconduct will result in a failing grade on the assignment, paper, quiz or exam in question and will be reported to Student Judicial Affairs.

Course Outline (subject to change)

Lecture and date	Lecture topic
1: Jan 18 th	Introduction – Climate & Society
2: Jan 20 th	Viewing: “An Inconvenient Truth”
3: Jan 25 th	Greenhouse effect
4: Jan 27 th	Greenhouse gases and radiative forcing
5: Feb 1 st	Fossil Fuels: industrial revolution
6: Feb 3 rd	Fossil Fuels: agriculture and transportation
7: Feb 8 th	Perturbed Carbon cycle
8: Feb 10 th	Earth’s climate today
9: Feb 15 th	Climate Feedbacks and Abrupt Climate Change
10: Feb 17 th	History of climate science
11: Feb 22 nd	Sociology of Climate Science today: the IPCC process
12: Feb 24 th	Climate Denialism
13: Mar 1 st	Midterm 1
14: Mar 3 rd	Economics of Climate Change [Guest lecture: Christian Traeger]
15: Mar 8 th	Is the Earth Warming?
16: Mar 10 th	Projections of future climate changes
17: Mar 15 th	Impacts: Sea Level Rise
18: Mar 17 th	Impacts: The Arctic
19: Mar 29 th	Impacts: Extreme Events
20: Mar 31 st	Impacts: Ecosystems and Public Health
21: Apr 5 th	Impacts: Agriculture
22: Apr 7 th	Local initiatives at climate protection [Guest lecture: Lisa McNeilly]
23: Apr 12 th	Mitigation/Adaptation to climate change
24: Apr 14 th	Midterm 2
25: Apr 19 th	Climate Treaty Verification [Guest lecture: Inez Fung]
26: Apr 21 st	Copenhagen [Guest Lecture: Jenny Cooper]; and Energy
27: Apr 26 th	Carbon sequestration and Geoengineering
28: Apr 28 th	Summary and wrapup