

AOS1 Climate Change: from Puzzles to Policy.

Tues/Thurs 9:30-10:45AM

PAB 1425

INSTRUCTOR: Prof. Alex Hall (alexhall@atmos.ucla.edu)

Math Sciences 7955

Office Hours: Tuesday, 1-2PM, or by appointment

OVERVIEW: This course is designed for students from all backgrounds. It has three aims: (1) to provide the scientific background necessary to understand climate-related issues. (2) to gain a scientific understanding of the human influence on climate over the past 100 years and the coming century. (3) to gain an appreciation for the role of science in shaping political debate on issues where accurate scientific information is critical. There will be a midterm and a final, as well as four homework problem sets.

TEACHING ASSISTANTS:

Peng Wang (pengwang@atmos.ucla.edu)

Pan Jiang (panjiang@ucla.edu)

TA Office Hours TBA

COURSE WEB SITE: <http://ccle.ucla.edu/>. Lecture slides will be posted on the course web site as a study aid.

REQUIRED TEXT: None, though readings will be required throughout the quarter, available through the department web site. The material in the readings may appear on exams, so it's essential to keep up with the reading.

GRADING: Homework 20%, Midterm 35%, Final 45%. Exams are based on lecture material and homework assignments. The four homework assignments are designed to highlight essential concepts.

SCHEDULE

Part I. Introduction to Climate Science

Course Overview and Lecture 1 (3-31-2009): Global Environmental Issues

Lecture 2 (4-2-2009): Heat and Radiation

Lecture 3 (4-7-2009): Sunshine and the Greenhouse Effect

Lecture 4 (4-9-2009): The Atmosphere

Lecture 5 (4-14-2009): The Ocean

Lecture 6 (4-16-2009): The Biosphere and the Carbon Cycle

Lecture 7 (4-21-2009): Paleoclimate, the Ice Ages, and the Holocene

Lecture 8 (4-23-2009): El Niño and Internal Climate Variability

Lecture 9 (4-28-2009): Climate Simulations and Future Climate Projections

REVIEW (4-30-2009) and MIDTERM (5-5-2009)

Part II. Understanding and Addressing Climate Change

Lecture 10 (5-7-2009): The IPCC and observed climate change

Lecture 11 (5-12-2009): The IPCC and future climate change

Lecture 12 (5-14-2009): The Arctic – first region to go?

Lecture 13 (5-19-2009): California – what's in store at home?

Lecture 14 (5-21-2009): The Energy Conundrum

Lecture 15 (5-26-2009): Public Sector Responses

Lecture 16 (5-28-2009): Private Sector Responses

Discussion (6-2-2009)

REVIEW (6-4-2009) and FINAL (6-9-2009, 11:30AM-2:30PM)

Homework and lab assignments will be given one week prior to their due date. They should be turned in by 5PM on the due date to your TA's mailbox (in Math Sciences 7139). Because of the large number of students in this course, hard copies of all assignments are required. (Assignments may not be emailed to the TAs.) Late assignments will not be accepted.

HOMEWORK DUE DATES

Assignment #1: 4-17-2009

Assignment #2: 5-1-2009

Assignment #3: 5-15-2009

Assignment #4: 5-29-2009

LABORATORY DUE DATES For those of you taking the "L" or laboratory option for this course, the due dates for the lab assignments will be staggered with the homework assignment due dates as follows:

Assignment #1: 4-24-2009

Assignment #2: 5-8-2009

Assignment #3: 5-22-2009

Assignment #4: 6-5-2009