AOS1 Climate Change: from Puzzles to Policy

Winter Quarter 2014
Mon/Wed 12:30PM–1:45PM
Bunche Hall, Room 2209A

INSTRUCTOR:
Prof. Alex Hall (alexhall@atmos.ucla.edu)
7955 Math Sciences
Office hours: By appointment
Please note that I do my best to answer emails within 24 hours. However, instant responses are not possible.

TEACHING ASSISTANTS:
Wu Sun (wusun@atmos.ucla.edu) Office hours: Tuesdays and Thursdays from 2pm–3pm, 7221 Math Sciences
Wendy Clark (wclark@atmos.ucla.edu) Office hours: Mondays and Tuesdays from 11am–12pm, 9275 Boelter Hall

COURSE WEBSITE: https://ccle.ucla.edu. Lecture slides will be posted on the course web site as a study aid.

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.

REQUIRED TEXT: There is no single text for this course. However, readings will be required on a regular basis throughout the quarter and will be available on the course website. 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

Monday, 1/5/15 — Course Overview and Lecture 1: Global Environmental Issues
Wednesday, 1/7/15 — Lecture 2: Heat and Radiation
Monday, 1/12/15 — Lecture 3: Sunshine and the Greenhouse Effect
Wednesday, 1/14/15 — Lecture 4: The Atmosphere
Monday, 1/19/15 — MLK holiday (NO CLASS)
Wednesday, 1/21/15 — Lecture 5: The Ocean
Monday, 1/26/15 — Lecture 6: The Biosphere and the Carbon Cycle
Wednesday, 1/28/2015 — Lecture 7: Paleoclimate and the Ice Ages
Monday, 2/2/15 — Lecture 8: Internal Climate Variability
Wednesday, 2/4/15 — Lecture 9: Global Climate Models and Climate Projections
Monday, 2/9/15 — REVIEW
Wednesday, 2/11/15 — MIDTERM (room TBA)
Monday, 2/16/15 — President's Day holiday (NO CLASS)

Part II. Understanding and Addressing Climate Change

Wednesday, 2/18/15 — Lecture 10: The IPCC and Observed Climate Change
Monday, 2/23/15 — Lecture 11: The IPCC and Future Climate Change
Wednesday, 2/25/15 — Lecture 12: Impacts on Humans
Monday, 3/2/15 — Lecture 13: Impacts on Ecosystems
Wednesday, 3/4/15 — Lecture 14: Impacts on Los Angeles
Monday, 3/9/15 — Lecture 15: The Energy Conundrum
Wednesday, 3/11/15 — Lecture 16: Policy Responses
Tuesday, 3/17/15 — FINAL (3:00–6:00 PM; room TBA)

Homework and lab assignments will be given one week prior to their due date. They must be turned in by 5PM on the due date to your TA's mailbox (in Math Sciences 7150). 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: 1/22/15
Assignment #2: 2/5/15
Assignment #3: 2/19/15
Assignment #4: 3/5/15

LABORATORY DUE DATES

If you are taking the "L" or laboratory option for this course, you will need to complete additional assignments. (There are no additional class meetings for the laboratory option.) The due dates for the lab assignments will be staggered with the homework assignment due dates as follows:

Assignment #1: 1/29/15
Assignment #2: 2/12/15
Assignment #3: 2/26/15
Assignment #4: 3/12/15