Geography 4/532: Climatological Aspects of Global Change

Spring 2014: 2:00-3:20 Tues & Thurs, 206 Condon Hall, CRN 39007 (432) 39008 (532)

Instructor: Patrick J. Bartlein, 154 Condon Hall, x6-4967, bartlein@uoregon.edu, office hours: 3:30-4:00p T, Th.
GTF: Jenna Duffin, 105 Condon Hall, x6-4564, jduffin@uoregon.edu, office hours: 10:00-11:00a T.

Overview: This course will focus on the concepts and procedures that underlie projecting the variations of the Earth’s climate system over the next few decades to centuries. We will rely mainly on the work done by the Intergovernmental Panel on Climate Change (IPCC) in preparing the Fifth Assessment Report.

Web Pages:
- Course web page: http://geography.uoregon.edu/bartlein/courses/geog432/
- Weather and climate page: http://geography.uoregon.edu/weather/
- Blackboard web page: http://blackboard.uoregon.edu/

Prerequisites: GEOG 321 Climatology or GEOG 322 Geomorphology or GEOG 323 Biogeography or GEOG 361 Global Environmental Change, or an equivalent.

Grading:
Undergraduates: Two exams (40% each), (take home), due at the beginning of week six, and during the final exam period (9 Jun 2014), and an annotated collection of five Internet URLs that feature global climate change-related material (10%), and discussion of ten of the submitted URLs (10%).

Graduates: Two exams (30% each), an annotated collection of five Internet URLs that feature global change-related material, and discussion of ten of the submitted URLs (20%), plus an annotated bibliography focusing on a global climate-change issue (20%).

Texts:

Schedule:
Week Topic -- See individual Blackboard pages for readings
1 Anthropogenic climate change, the IPCC, and the AR5; the climate system
2 Climate history up to the industrial period
3 Changes in atmospheric composition and radiative forcing
4 Observed changes in the atmosphere, ocean and cryosphere
5 Observed changes, continued.
6 The carbon cycle and feedbacks
7 Climate models and their evaluation
8 Near-term global projections
9 Regional and long-term projections
10 Impacts, adaptation and vulnerability

Expected effort: Lectures will meet for 1.5 hours each, twice a week. Tracking down and describing the URLs that must be contributed and commenting on them should take about two hours per week. In addition to the usual reading and study outside of class, it will be beneficial to spend a little time each day to follow the day-to-day variation of the weather and progression of the season in a regular fashion.

Other topics: The visual inspection and interpretation of the maps and images will be important, but accommodation for alternative methods of course-material access may be possible--please see me as soon as possible. Collaboration on the exam questions is a good idea, but answers should be written individually. Beware of the uncritical use of web resources to answer questions—plagiarism rules will be strictly enforced. Other academic dishonesty policies will be enforced:

http://uodos.uoregon.edu/StudentConductandCommunityStandards/tabid/68/Default.aspx

Also, the support provided by the following may be useful:
- UO Division of student affairs: http://studentaffairs.uoregon.edu/
- University Counseling and Testing Center: http://studentaffairs.uoregon.edu/

Classroom etiquette: It would be fine (and might be a good idea) to bring notebook computers, tablets and smartphones to class, but using them for purposes other than notetaking or browsing climate-related web pages during class would be unprofessional.

Learning objectives: This course contributes towards the following Geography Dept. objective: A general understanding of major environmental, cultural, socioeconomic and political patterns in the world, and of the key drivers that give rise to those patterns.