

Climate Change

GRG 333K, Fall 2012
TTh 3:30 PM in GRG 312



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Office hours: Tuesday 11 AM, or by appointment

Course Description:

This course will survey the causes of changes in climatic systems over both short and long time periods and their consequences for landscape dynamics, biogeography, land use, sustainability, and vulnerability. The first part of the course will introduce the study of climates from an earth systems approach. Implications of differences in climate for carbon, biodiversity, and humans will be discussed. The second part of the course will look at historical and current climate change trends and controls worldwide, including coverage of the different scientific methods used for studies of these processes. We will build towards developing the expertise to critically evaluate future climate scenarios using environmental and socio-ecological approaches.

Students are expected to read the assigned readings and participate actively in class. The exams will test knowledge, vocabulary, and ability to explain and apply information. The class projects and writing assignment will work on the ability to synthesize and communicate on scientific issues associated with climate change.

Prerequisites:

Assumes background from GRG 301C, GRG 301K, or an equivalent course.

Required textbooks:

K. Richardson, W. Steffen, and D. Liverman (eds.). 2011. *Climate Change : Global Risks, Challenges and Decisions*. Cambridge University Press,

Cambridge. ISBN 978-0-521-19836-3 (hardback; a digital version is also available).

Grading:

Two exams (vocabulary, short answer/essay)---200 points (100 points each).

Seven in-class projects/discussions---70 points (10 points each).

One written project---30 points

Final letter grades for the course are assigned by percentages of the 300 total possible points: $\geq 92\%$ =A; 90-91.99%=A-; 88-89.99%=B+; 82-87.99%=B; 80-81.99%=B-; 78-79.99%=C+; 72-77.99%=C; 70-71.99%=C-; 68-69.99%=D+; 62-67.99%=D; 60-61.99%=D-; <60 =F.

The exams are based on the assigned readings, the lectures, and the class discussions and projects. Note that the University of Texas at Austin provides upon request appropriate academic adjustments for qualified students with disabilities; for more information, contact the Office of the Dean of Students (471-6259, 471-4641).

The final 30-point project is a three (or four) page essay on one of three possible chapters (14, 15 or 16) in the Richardson et al. textbook, to be done independently and due on the last day of class, along with a brief informal oral presentation of findings to the class. You should briefly summarize the main points in the chapter you have chosen, and then explain what specific research and policy changes are necessary, in your opinion, to carry out the adaptation and development called for. Cite any sources you use in the same manner as is done in the Richardson et al. textbook. Note that this assignment replaces the final exam and so must show mastery of the topics covered in the semester.

Course schedule:

<u>Dates</u>	<u>Topics</u>	<u>Richardson et al. readings</u>
30 August	Introduction	
4-6 Sept.	Global climate systems	Chap. 1
11 Sept.	Oceans, Ice	Chap. 2, 3
13 Sept.	Vulnerability; Class project #1	Chap. 5
18 Sept.	Oceans, Ice	Chap. 2, 3
20 Sept.	Carbon	Chap. 4
25 Sept.	Carbon, Biodiversity	Chap. 4, 6

27 Sept.	Technology; Class project #2	Chap. 11
2 Oct.	Carbon, Biodiversity	Chap. 4, 6
4 Oct.	Review	
9 Oct.	Exam #1	
11 Oct.	TBA	
16 Oct.	Interactions	Chap. 7
18 Oct.	Targets; Class project #3	Chap. 8
23 Oct.	Interactions	Chap. 7
25-30 Oct.	Equity, Economics	Chap. 9, 12
1-6 Nov.	Governance	Chap. 10, 13
8 Nov.	Anthropocene; Class project #4	Chap. 17
13 Nov.	Governance	Chap. 10, 13
15 Nov.	Review	
20 Nov.	Exam #2	
22 Nov.	Thanksgiving	
27 Nov.	Class project #5	Chap. 14
29 Nov.	Class project #6	Chap. 15
4 Dec.	Class project #7	Chap. 16
6 Dec.	Written project due, with brief in-class presentation	

Temperature?



Time