

## **Metr 4803/5803 Section 001 Global Climate Change - Understanding the IPCC Process and Findings**

**Meets:** TR 1:00 – 2:15 NWC 5820

**Professor:** Dr. Michael Richman

**Office:** NWC 5646, Office Hours: TR 2:15 – 3:15 and by appointment

**Contact:** [mrichman@ou.edu](mailto:mrichman@ou.edu)

**Prerequisite:** *One* of the following: A course in Intro Meteorology, Intro Earth System Science, Intro Physical Geography, Intro Geology or Permission of the Instructor. Contact instructor for electronic permission.

**Description:** Have you ever asked yourself one of the following questions? What factors determine the earth's climate? How do human activities contribute to climate change and how do they compare to natural influences? How are the temperatures and precipitation on earth changing? Has there been a change in extreme events like heat waves, droughts, floods and hurricanes? Is the current climate change unusual compared to earlier changes in the earth's history?

The Intergovernmental Panel on Climate Change (IPCC) assesses the scientific, technical and socio-economic information relevant for the understanding of the risk of human-induced climate change. The World Meteorological Organization and the United Nations Environment Programme established it. Since 1990, the IPCC has released four major sets of reports. The main activity of the IPCC is to provide at regular intervals Assessment Reports of the state of knowledge on climate change. The latest one is "Climate Change 2007", the IPCC Fourth Assessment Report. The Fifth Assessment Report is due out in the Spring of 2013 and we have the preliminary versions of AR5 available for this class. These will serve as the guide for this class. The class will involve short lectures followed by roundtable discussions of the reading assignments on the topics listed under the syllabus.

### **Books:**

1. Archer, David, 2011: Global Warming: Understanding the Forecast. ISBN-10: 0470943416, ISBN-13: 978-0470943410
2. The IPCC Reports -- Available free online in the class D2L site

**Course Work:** Students will be assigned readings in the text and subchapters of the IPCC to motivate presentations. The preparation will involve reading the chapters and selected papers in the scientific literature that supports the IPCC material. Students will prepare short overviews of their readings to present to the class. You must relate your presentation to the specific IPCC Chapter. Be specific in doing so. The class grading will be based on the short reports and presentations. *Graduate students will be expected to write a term paper on a topic agreed upon by the student and professor.*

**Grades:** There are no tests in this class, including no final exam. The emphasis will be on understanding material and synthesizing it in class presentations. Each student will select a topic of interest within each set of chapters covered during a given week and present a 20 minute PowerPoint type overview of their study to the class each week. Five minutes of Q&A will follow. Your grade will be dependent upon (1) the quality of your presentation (guidelines will be supplied) and (2) how well you field questions from the class and instructor. Active participation is required so bring energy to this class.

*Graduate students will have a paper due at the end of the class worth 25% of the total grade. See the instructor to decide on an appropriate topic.*

**Week Number / WG1 Topic from IPCC Report - Section / Archer Chapter**

- 1 /SummaryForPolicymakers\_WG1AR5-SPM\_FOD\_Final & TechnicalSummary\_WG1AR5-TS\_FOD\_All\_Final / Preface & Chapter 5 (for basic meteorology)**
- 2 /Ch1-Introduction\_WG1AR5\_SOD\_Ch01\_All\_Final / Part I Chapter 1**
- 3 /Ch2\_Obs-atmosur\_WG1AR5\_SOD\_Ch02\_All\_Final.pdf / Part III Chapter 11**
- 4 /Ch3\_Obs-oceans\_WG1AR5\_SOD\_Ch03\_All\_Final**
- 5 /Ch4\_obs-cryo\_WG1AR5\_SOD\_Ch04\_All\_Final**
- 6 /Ch5\_Paleo\_WG1AR5\_SOD\_Ch05\_All\_Final**
- 7 /Ch6\_Carbonbio\_WG1AR5\_SOD\_Ch06\_All\_Final / Part II Chapters 8, 9, 10**
- 8 /Ch7\_Clouds-aerosols\_WG1AR5\_SOD\_Ch07\_All\_Final**
- 9 /Ch8\_Radiative-forcing\_WG1AR5\_SOD\_Ch08\_All\_Final & Ch8\_supplement\_WG1AR5\_SOD\_Ch08\_SM\_Final / Part I Chapters 2, 3, 4**
- 10 /Ch9\_models\_WG1AR5\_SOD\_Ch09\_All\_Final / Part II Chapters 6, 7 & Part III Chapter 12**
- 11 /Ch10\_attribution\_WG1AR5\_SOD\_Ch10\_All\_Final**
- 12 /Ch11\_near-term\_WG1AR5\_SOD\_Ch11\_All\_Final / Part III Chapter 13**
- 13 /Ch12\_long-term\_WG1AR5\_SOD\_Ch12\_All\_Final**
- 14 /Ch13\_sea-level\_WG1AR5\_SOD\_Ch13\_All\_Final**
- 15 /Ch14\_future-regional\_WG1AR5\_SOD\_Ch14\_All\_Final & Ch14\_supplement\_WG1AR5\_SOD\_Ch14\_SM\_Final**

## **OU Rules and Statements**

*The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or fax only 405/325-4173. Their web site is: <http://www.ou.edu/drc/home.html> Students with disabilities who require accommodations in this course are requested to speak with the professor as early in the semester as possible. **Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course.** The registration process requires documentation and is outlined here: [http://www.ou.edu/content/drc/home/registering\\_with\\_drc.html](http://www.ou.edu/content/drc/home/registering_with_drc.html)*

*All students are expected to be familiar with and abide by the OU Academic Misconduct Code. Information on this code and other student policies is located at <http://integrity.ou.edu> Information on plagiarism can be found at [http://integrity.ou.edu/files/nine\\_things\\_you\\_should\\_know.pdf](http://integrity.ou.edu/files/nine_things_you_should_know.pdf)*