

Metr 4803/5803 Section 001 Global Climate Change - Understanding the IPCC Findings

Meets: TR 1:00 – 2:15 NWC 5720

Professor: Dr. Michael Richman

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

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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 report 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: Green class – no trees destroyed. 😊 ☐ No textbook. ☐ The IPCC Reports are available on D2L. **THERE IS A LARGE AMOUNT OF READING INVOLVED IN THIS CLASS – DO NOT FALL BEHIND IN THE READINGS.** Most sources you may want to examine as background or as supplements to the IPCC reports can be downloaded free on LORA. Go to <http://libraries.ou.edu/eresources/> or <http://libraries.ou.edu/eresources/guides/?id=31> for LORA links.

Course Work: Students will be assigned subchapters of the IPCC to report on. The preparation will involve reading the chapters and selected papers in the scientific literature that supports the IPCC material. Students will work in subgroups and prepare short overviews of their readings to present to the class. You must relate your presentation to the specific 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. All students will be assigned to groups. Each group will select a topic of interest within each set of chapters covered during a given week. Each group will present a 20 minute PowerPoint type overview of their study to the class each week. Five minutes of Q&A will follow. The group spokesperson will rotate, so that each student can be spokesperson several times. 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. You will receive written feedback from the class after each presentation.
→ **All students are expected to ask questions of the group doing their presentations. Active participation is required.**
→ **Every person in the class, other than the group presenting, is expected to grade every presentation. You will do that online. Grades are due within 24 hours of the presentation. Failure to grade a presentation will result in a mark down on your grade. The grading scale is 0 to 10 with 10 being perfect. The professor will grade every presentation too.**

Professional conduct is required, including knowing the details of the OU misconduct code, plagiarism, etc. Take the plagiarism quiz at <http://www.ou.edu/provost/integrity/player.html>

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 Topic IPCC Report/Section

- 1 Historical overview of climate change science WG1/1,TS.3.4,TS.6.1-TS.6.2**
- 2 Changes in atmospheric constituents and in radiative forcing WG1/2, TS.2.1-TS.2.5**
- 3 Observational evidence for climate change in the surface and atmosphere WG1/3, &2Supp.,TS.3.1**
- 4 Observational evidence for climate change in snow, ice and frozen ground WG1/4, TS.3.2**
- 5 Observational evidence for climate change in the oceans WG1/5,TS.3.3**
- 6 Paleoclimate WG1/6, &6 Supp.,TS.3.5**
- 7 Couplings between the climate change and biogeochemistry WG1/7,TS.5.4**
- 8 Understanding climate models WG1/8,TS.5.1,TS.5.5, &Uncertainty Guidance**
- 9 Understanding and attributing climate change WG1/9, &9 Supp.,TS.4.1-TS.4.5,TS.6.3**
- 10 Global climate predictions WG1/10,& 10 Supp.,TS.5.2,TS.6.4**
- 11 Regional climate predictions WG1/11,& 11 Supp.,TS.5.3**
- 12 Overview of impacts, adaptation and vulnerability – ecosystems WG2/Policy maker & Tech. Summ., Ch. 1 – 6, incl. 1 summ.**
- 13 Overview of impacts, adaptation and vulnerability – impacts on each continent WG2/9 – 16**
- 14 Overview of mitigation of climate change WG3/Policy maker & Tech. Summ., Ch. 1 – 3**
- 15 Overview of the impacts on various sectors of the economy WG3/4-9**

OU Rules and Statements

The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. 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 Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or fax only 405/325-4173.

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://studentconduct.ou.edu>. Information on plagiarism can be found at <http://casweb.ou.edu/olr/public/students/plagiarism.htm>