

Climate Change: Science and Society
FOR 295 / EVST 295 / GEOG 295 / GEOS 295 / HC 395

INSTRUCTORS: Dr. Steve Running, CHCB 428, swr@nts.g.umt.edu
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CLASS MEETING: Tuesdays & Thursdays 3:40 – 5:00 p.m.,
 Clapp Building, Room 131

OFFICE HOURS: By appointment

TEXTBOOK: Robert Henson. *The Rough Guide to Climate Change* (Rough Guides, 2008)

ADDITIONAL READINGS:

You can download the:

- the IPCC Working Group I Summary for Policymakers,
<http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf> and
- the Pew Center's Climate Change 101,
http://www.pewclimate.org/global-warming-basics/climate_change_101.

Additional readings will be posted in the Online Deliberation Center (ODC).

Course Description and Objectives: This is a foundational course on the scientific and social dimensions of global climate change. The goal of this course is to provide students with a basic understanding of the fundamental scientific, social, political and technological issues arising from rapid climatic change. To fulfill this goal the course has three major objectives. Students will be able to: (1) demonstrate an understanding of the basic science of climate change, (2) articulate and discuss the important ethical, social and political issues arising from global warming, and (3) critically analyze and discuss possible reactions and solutions to the threat of human-caused climatic change.

Class Format: Each week we will discuss different topics related to climate change science and policy. There will be assigned readings from the textbook and the literature. The class will include presentations by invited speakers who have expertise in specific areas of climate change science, policy, and solutions.

Grading: There will be two tests in the class, including the final. There will be one group project due at the end of class with specified “checkpoints” throughout the semester. During this project, your group will create a Wiki page containing information about a specific solution to global climate change. Topics and details will be provided separately. Attendance at all classes is expected. *You will not be penalized for your personal beliefs in this class. However, you must support your statements with the most current, best available evidence.*

Point Distribution	General Credit	Honors Credit
Midterm	25	25
Online Deliberation Center (OCD) Project	40	40
Critical Book Review	n/a	20
Final Exam	35	35
Total	100	120

Email policy at UM

According to the new University email policy effective on 1 July 2007, an “employee must use *only* UMM assigned student email accounts for all email exchanges with students, since such communication typically involves private student information.” This means that you *must* send any correspondence through your GrizMail account. For more information on setting up and using your GrizMail account, please go to <http://www.umt.edu/it/email/studentemail.htm>.

Academic Misconduct and the Student Conduct Code:

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at <http://www.umt.edu/SA/VPSA/index.cfm/page/1321>.

Date	Topic	Rough Guide Readings	Additional Readings	Speaker
Aug 26	Introduction to Climate Change	Part 1: The basics, pp. 3-42		Dr. Steve Running, Forestry, Dr. Dane Scott, Center for Ethics
Aug 28	Energy Balance & Greenhouse Gases	Part 1: The basics, pp. 3-42		Dr. Steve Running, Forestry
Sept 2	Logging into the ODC Climate Change Science	Keeping track, pp. 171-192	IPCC, Working Group I, Summary for Policymakers	Dr. Dane Scott, Center for Ethics Dr. Steve Running, Forestry
Sept 4	Paleoclimatology	The long view, pp. 193-220		Dr. Anna Klene, Geography
Sept 9	Climate Change of the Last 1000 years	The long view, pp. 220-226		Dr. Faith Ann Heinsch, Forestry
Sept 11	Setting Up the ODC Contributor Page Projected Climate Change	Part 2: The symptoms, pp. 45-168	Climate Change 101: The Science and Impacts	Dr. Dane Scott, Center for Ethics Dr. Steve Running, Forestry
Sept 16	Ecosystem Impacts of Climate Change	Circuits of change, pp. 227-244	IPCC Working Group I, Summary for Policymakers	Dr. Steve Running, Forestry
Sept 18	The Cryosphere			Dr. Joel Harper, Geosciences
Sept 23	Threaded Discussion on projected CC (Question TBA) Impacts of Climate Change on Wildlife		IPCC, Working Group II, Impacts, Adaptation and Vulnerability, Chapter 14, pp. 620-623 and 627-630 (http://www.ipcc.ch/ipccreports/ar4-wg2.htm)	Dr. Faith Ann Heinsch, Forestry Dr. Scott Mills, Wildlife Biology
Sept 25	Impacts of Climate Change on Human Health and Disease		IPCC, Working Group II, Impacts, Adaptation and Vulnerability, Chapter 8, pp. 392-419 (http://www.ipcc.ch/ipccreports/ar4-wg2.htm)	Dr. Curtis Noonan, Biomedical and Pharmaceutical Sciences
Sept 30	MIDTERM			
Oct 2	Introduction to the ODC & Ethics Topic I: Ethics and Scientific Uncertainty		Scott, "Ethics Education through Deliberation" & Brown, et al. "White Paper on the Ethical Dimensions of Climate Change," pp. 23-28 (ODC)	Dr. Dane Scott, Center for Ethics
Oct 7	Ethics Topic II: Distributive Justice and Climate Policy		PEW, "Equity & Global Climate Change" (ODC)	Dr. Dane Scott, Center for Ethics
Oct 9	Ethics Topic III: Intergenerational Justice and Climate Policy		H. Shue, "Responsibilities to Future Generations and Technological Transition" (ODC)	Dr. Dane Scott, Center for Ethics

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Oct 14	Threaded Discussion on CC ethics (Question TBA) Communicating Climate Change / Climate Change in the Popular Press	A heated debate, pp. 247-277		Dr. Dane Scott, Center for Ethics Dr. Steve Schwarze, Communication Studies
Oct 16	Economics of Climate Change – Kyoto, Cap and Trade, Carbon Tax	Political solutions, pp. 286-300		Dr. Richard Barrett, Economics
Oct 21	Business and Climate Change		Climate Change 101: Business Solutions	Lisa Swallow, Business Technology
Oct 23	Chinese Perspectives on International Policy and GHG Emissions Mitigation		TBA	Dr. Peter Koehn, Political Science
Oct 28	International Perspectives on Climate Change – European Union and the Developing World	Political solutions, pp. 300-305	Climate Change 101: International Action	TBA
Oct 30	Threaded Discussion on US CC politics (Question TBA) National Politics of Climate Change	Political solutions, pp. 300-305; 335-337	Climate Change 101: Local Action and State Action	Dr. Dane Scott, Center for Ethics David Merrill, GlobalWarmingSolution.org
Nov 4	ELECTION DAY			
Nov 6	Local / State Politics of Climate Change		TBA	Dr. Robin Saha, Environmental Studies
Nov 11	VETERANS DAY			
Nov 13	Greenhouse Gas Accounting	Technical solutions, pp. 327-330; 335-356	Climate Change 101: Technical Solutions	Dr. Ashley Preston, College of Technology
Nov 18	Solutions – Wind / Solar	Technical solutions, pp. 314-317	Brown, “Turning to Renewable Energy” pp. 237-261 (ODC)	Dr. Brian Kerns, Alternative Energy Technology Program
Nov 20	Solutions – Building Energy Efficiency	Technical solutions, pp. 317-319	Brown, “Raising Energy Efficiency” pp. 213-236 (ODC)	Ed Gulick, High Plains Architects
Nov 25	Solutions – Biofuels and Transportation	Technical solutions, pp. 322-327		TBA
Nov 27	THANKSGIVING			
Dec 2	Solutions – Nuclear / Clean Coal	Technical solutions, pp. 306-313, 320-322		Dr. Steve Running, Forestry and/or Dr. Faith Ann Heinsch, Forestry
Dec 4	Solutions -- Education		TBA	Dr. Royce Engstrom, Provost and Vice President for Academic Affairs
Dec 9	3:20-5:20 p.m. FINAL EXAM			