

**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  
 Dr. Dane Scott, The Center for Ethics, dane.scott@mso.umt.edu  
 Dr. Faith Ann Heinsch, CHCB 435, faith.heinsch@umontana.edu  
 Nicky Phear, CHCB xxx, nicky.phear@cfc.umt.edu

**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](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.*

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

**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	<a href="#">Logging into the ODC</a> Climate Change Science	Keeping track, pp. 171-192	IPCC, Working Group I, Summary for Policymakers	<a href="#">Dr. Dane Scott, Center for Ethics</a> 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	<a href="#">Setting Up the ODC Contributor Page</a> Projected Climate Change	Part 2: The symptoms, pp. 45-168	Climate Change 101: The Science and Impacts	<a href="#">Dr. Dane Scott, Center for Ethics</a> 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	<a href="#">Threaded Discussion on projected CC (Question TBA)</a> Impacts of Climate Change on Wildlife		IPCC, Working Group II, Impacts, Adaptation and Vulnerability, Chapter 14, pp. 620-623 and 627-630 ( <a href="http://www.ipcc.ch/ipccreports/ar4-wg2.htm">http://www.ipcc.ch/ipccreports/ar4-wg2.htm</a> )	<a href="#">Dr. Faith Ann Heinsch, Forestry</a> 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 ( <a href="http://www.ipcc.ch/ipccreports/ar4-wg2.htm">http://www.ipcc.ch/ipccreports/ar4-wg2.htm</a> )	Dr. Curtis Noonan, Biomedical and Pharmaceutical Sciences
Sept 30	<b>MIDTERM</b>			
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

<b>Date</b>	<b>Topic</b>	<b>Rough Guide Readings</b>	<b>Additional Readings</b>	<b>Speaker</b>
<b>Oct 14</b>	<a href="#">Threaded Discussion on CC ethics (Question TBA)</a> Communicating Climate Change / Climate Change in the Popular Press	A heated debate, pp. 247-277		<a href="#">Dr. Dane Scott, Center for Ethics</a> Dr. Steve Schwarze, Communication Studies
<b>Oct 16</b>	Economics of Climate Change – Kyoto, Cap and Trade, Carbon Tax	Political solutions, pp. 286-300		Dr. Richard Barrett, Economics
<b>Oct 21</b>	Business and Climate Change		Climate Change 101: Business Solutions	Lisa Swallow, Business Technology
<b>Oct 23</b>	Chinese Perspectives on International Policy and GHG Emissions Mitigation		None	Dr. Peter Koehn, Political Science
<b>Oct 28</b>	International Perspectives on Climate Change – European Union and the Developing World	Political solutions, pp. 300-305	Climate Change 101: International Action	Dr. Ulli Kamp, Geography
<b>Oct 30</b>	<a href="#">Threaded Discussion on US CC politics (Question TBA)</a> National Politics of Climate Change	Political solutions, pp. 300-305; 335-337	Climate Change 101: Local Action and State Action	<a href="#">Dr. Dane Scott, Center for Ethics</a> David Merrill, GlobalWarmingSolution.org
<b>Nov 4</b>	ELECTION DAY			
<b>Nov 6</b>	Local / State Politics of Climate Change		3 News Articles	Dr. Robin Saha, Environmental Studies
<b>Nov 11</b>	VETERANS DAY			
<b>Nov 13</b>	Greenhouse Gas Accounting	Technical solutions, pp. 327-330; 335-356	UM Greenhouse Gas Inventory	Jessie Davie, ASUM Sustain
<b>Nov 18</b>	Solutions – Wind / Solar	Technical solutions, pp. 314-317	Brown, “Turning to Renewable Energy” pp. 237-261 (ODC)	Dr. Ashley Preston, College of Technology
<b>Nov 20</b>	Solutions – Building Energy Efficiency	Technical solutions, pp. 317-319	Brown, “Raising Energy Efficiency” pp. 213-236 (ODC)	Ed Gulick, High Plains Architects
<b>Nov 25</b>	Solutions – Biofuels and Transportation	Technical solutions, pp. 322-327	Climate Change 101: Technical Solutions	Dr. Brian Kerns, Alternative Energy Technology Program
<b>Nov 27</b>	THANKSGIVING			
<b>Dec 2</b>	Solutions – Nuclear / Clean Coal	Technical solutions, pp. 306-313, 320-322		Dr. Steve Running, Forestry and/or Dr. Faith Ann Heinsch, Forestry
<b>Dec 4</b>	Solutions -- Education		TBA	Dr. Royce Engstrom, Provost and Vice President for Academic Affairs
<b>Dec 9</b>	<b>3:20-5:20 p.m. FINAL EXAM</b>			