

ISEN 230/PHIL 270

Climate Change and Sustainability: Ethical and Economic Dimensions

Spring Quarter, 2015

Course Description

Interdisciplinary analysis of the ethical, economic and political questions underlying climate change, including discussion of sustainability concepts, a review of the evidence for human-induced climate change, an exploration of the ethics of resource use, conservation practices, and environmentalism, and an economic analysis of impacts, uncertainty, and feasible responses.

Instructors

Lynne Kiesling, Office Hrs: TUES, THURS 1-2; Andersen 3228; 847 491 8250; lkiesling@northwestern.edu
Matt Kopec, Office Hrs: MO, TH 10-11; Crowe 2-144; 847 467 6041; matthew.kopec@northwestern.edu
Brad Sageman, Office Hrs: TUES 3-5, Tech F397; 847 467 2257; brad@earth.northwestern.edu

Lecture: MON, WED 3:30 - 4:50 pm, HARRIS 107

Reading

All material on Canvas: includes selections from...

- Excerpt from "The Brundtland Report" World Commission on Environment and Development, 1987, *Our Common Future, Report of the World Commission on Environment and Development*; Annex to General Assembly document A/42/427.
- The Anthropocene, *The Economist*
- Kump, L.R., Kasting, J.F., & Crane, R.G., 2010, *The Earth System*, 3rd Ed., Prentice Hall, San Francisco.
- Mathez, E.A., 2009, *Climate Change*, Columbia University Press, New York.
- NRC 2012 Report on Climate Change, National Research Council.
- IPCC 2013, Summaries for Policy Makers (SPM) – Physical Science & Special Report on Renewable Energy (SRREN); Cambridge Univ. Press.
- Selections from the writings of Mill, Locke, Hume, Smith, Solow, Nordhaus, Ostrom and others
- ...and selected articles TBA

Evaluation

The course has three take home research/writing assignments of equal weight (33.3 percent). These assignments will integrate course content and your own research on three main topics – climate and energy science, philosophical and ethical implications, and economics analysis. **Assignments will be posted on the last day of each section of the course and they will be due in class one week later.**

Disclaimer

All students should review Northwestern University's principles regarding Academic Integrity (<http://www.northwestern.edu/uacc>) and Weinberg College policies on Academic Integrity (<http://www.wcas.northwestern.edu/advising/academic.html>). Suspicion of possible violations of academic integrity will be pursued aggressively in consultation with the WCAS dean's office.

*If you cannot participate in a scheduled assignment for this class you must contact the TA or professors **BEFORE** the absence occurs or receive a grade of "0" for the assignment. Only cases of documented medical or family emergency are exempt.*

LECTURE SCHEDULE

Part I: The Science of Climate Change

- 3/30 **1) Introduction - Sustainability & Climate**
 Readings: Brundtland excerpt; Anthropocene 1 & 2, *Economist*
- 4/1 **2) The Earth's climate system**
 Readings: Kump et al. CH 1, 3; Mathez CH 1-3
- 4/6 **3) Evidence for global warming**
 Readings: Mathez CH 4-5; NRC Report 2012; IPCC 2013 SPM-Phys Sci
- 4/8 **4) Energy problems, energy solutions**
 Readings: Mathez CH 10; IPCC 2013 SPM-SRREN
-

Part II: The Ethics of Climate Change and Sustainability

- 4/13 **5) Political ideology and climate science & policy**
 Readings: Klein (2014); Jacquet et al. (2014); TBA
- 4/15* **6) Ethics of geoengineering and introduction to philosophical methodology**
 Readings: Gardiner (2010); TBA
- 4/20 **7) Ethics of animal agriculture**
 Readings: Singer (1977); Regan (1986); Carrington (2014)
 [Optional: Norcross (2004)]
- 4/22 **8) Procreation and future generations**
 Readings: Young (2001); Parfit (1982); Parfit (2004)
- 4/27 **9) The problem of causal impotence**
 Readings: Sinnott-Armstrong (2005); Sandler (2010)
- 4/29 **10) Collective action and collective responsibility**
 Readings: Hardin (1968); Gardiner (2011)
-

5/4	11) Economics, sustainability, and property	
	Readings:	Economic Way of Thinking, Chapter 1; Solow 1991; Hume 1738, Book III, selection
5/6*	12) Property rights, commons, political economy of collective decision-making	
	Readings:	Ostrom et. al. 1999; Dietz, Ostrom, Stern 2003; Shugart "Public Choice"; Yandle
5/11	13) Discounting; benefits and costs of energy use and of GHG reduction policies	
	Readings:	Science News "Discounting the Future"; Nordhaus/Stern <i>Science</i> exchange; Nordhaus QoB Chap. 1 pp. 1-11; Greenstone & Looney 2012 pp. 10-25
5/13	14) Economic analysis of climate policy instruments	
	Readings:	Nordhaus QoB Chap. 1 to end; Greenstone & Looney 2012 to end; Aldy & Stavins 2012
5/18	15) In-class video presentation:	<i>Earth: The Operators Manual</i>
5/20	16) Economics of new energy technologies	
	Readings:	LCOE estimates; readings TBD
<hr/>		
5/25	17) Memorial Day, no class	
5/27	18) Guest lecture (Roger Gray, CEO)	
6/1	19) Summary and conclusions	
	Readings:	Burtraw Q&A (2014); Other TBD
<hr/>		
6/8*	Final assignment due	

*due dates for take home assignments