

Course: SIOC 292

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Winter 2016

Revised 22 January 2016

Syllabus

Pre-assignments: Please take the time to watch these videos (free, on YouTube):

Richard Alley: https://www.youtube.com/watch?v=RffPSrRpg_g

Naomi Oreskes: https://www.youtube.com/watch?v=2T4UF_Rmlio

Kevin Anderson : <https://www.youtube.com/watch?v=-rE7v7n4QVc>

And also peruse Spencer Weart's Discovery of Global Warming's website:

<https://www.aip.org/history/climate/index.htm>

Especially the Summary; The Carbon Dioxide Greenhouse Effect; Theory sections

Books to buy/rent:

William Nordhaus, *The Climate Casino: Risk, Uncertainty, and Economics for a Warming World* (Yale University Press) 2015.

Dale Jamieson, *Reason in a dark time: Why the Struggle against Climate Change Failed—and what it means for our future*, Oxford University Press, 2014.

Naomi Oreskes and Erik Conway, *Collapse of Western Civilization: A View from the Future* (Cambridge University Press, 2014).

Focus: The goal of this course is to familiarize students with the policy history of climate change, and given them an in-depth understanding of climate policy options as they've been discussed in policy-related literature.

Proceedings: Our class period is three hours long. That's far too long for lecturing! I plan to lecture for no more than 90 minutes per period. I may use some of that time for videos; if I can identify a good guess lecture, I will use the time for that. *At least* 30 minutes of each class will be discussion of readings. Come prepared!

Finally, the assignments emphasize writing. As potential future policy people, you will be expected to be able to summarize an argument or set of facts into a briefing, or to write a "white paper" for your boss. Being able to express yourself clearly and succinctly matters!

Assignments: There will be 3 essay assignments due in class and a final paper. They will be:

Assignment 1: 3-5 page essay on why you're in the class and what you hope to get out of it.

Assignment 2: Essay Review. This will be a review of several books on a theme (related to this course) that you choose. Possibilities include: Geoengineering; the future role of nuclear power for climate mitigation; Is the 2C “limit” possible?; the ethics of discounting; modeling in the climate casino. MANY other themes are possible—this is a broad, rich subject. Style should be like that of the New York Review of Books. ALSO: create a briefing to accompany your essay. You’ll have 5 minutes in class to present it.

Some suggested books are listed at the end of the syllabus. Length should be 2000-3000 words. (Smart students will use this essay to help with Assignments 3 and 4).

Assignment 3: Draft of your final paper (!) See assignment 4 below.

Assignment 4: Final Paper. I expect a paper of roughly 7500 words on some aspect of climate policy. It can be a: review and analysis of the Regional Greenhouse Gas Initiative; a critique of the use of models in policy formulation; a history of the (new) 1.5C “limit”; the ethics of geoengineering; growth as a policy problem. . . I could go on nearly forever. *You should talk to me about your choice early in the course.*

NOTE: Week 10 is student presentations. You will present your final paper to the class. Length TBD.

Class Schedule

Week 1 [January 8]: Introduction; A brief history of climate science

Readings: See pre-assignment above.

Suggested additional reading: Merchants of Doubt, chapter 6 and Conclusion

Week 2 [January 15]: First Assignment Due! Early efforts towards climate policy

Jamieson, Ethics and the Environment, Chapter 2 and 3.

Aldy, Joseph and Robert N. Stavins. "Climate Policy Architectures for the Post-Kyoto World." *Environment: Science and Policy for Sustainable Development* 50, no. 3 (May / June 2008): 6-17.
http://belfercenter.ksg.harvard.edu/publication/18231/climate_policy_architectures_for_the_postkyoto_world.html

Dessler and Parsons, The Science and Politics of Global Climate Change (2nd): Chapter 4

Nordhaus, Climate Casino, chapter 17

Aaron McCright and Riley Dunlap, “Defeating Kyoto: The Conservative Movement’s Impact on US Climate Change Policy,” *Social Problems* 50:3, 348-373.

Week 3 [January 22] Modeling Climate: Physical and Economic

Guest Lecture by Richard Somerville, Scripps Emeritus.

Jamieson, Chapter 4.

Schneider, Stephen. "Introduction to Climate Modeling." In *Climate System Modeling*. Edited by Kevin Trenberth. Cambridge, UK: Cambridge University Press, 1993, pp. 3-26. ISBN: 9780521432313. (at CIT)

Weyant, J. "Economic Models: How They Work and Why Their Results Differ." In *Climate Change: Science, Strategies, and Solutions*. Edited by Eileen Claussen. Washington, DC: Pew Center on Global Climate Change, 2001. ISBN: 9789004122765.

CBO, The Economics of Climate Change: A Primer. (<https://www.cbo.gov/publication/14387>)

Suggested: If you're really into economic models of climate, peruse Nordhaus, "A Question of Balance (listed below), and check out the website he maintains on his DICE model of climate economics. <http://www.econ.yale.edu/~nordhaus/homepage/>

Paul N. Edwards: Global Climate Science, Uncertainty and Politics: Data-laden models, model-filtered data," *Science in Culture* 8:4, 1999. DOI 10.1080/09505439909526558

Week 4 [January 29] Assignment #2 Due. Student Presentations

A brief history of the IPCC.

Samuel Randalls, History of the 2C Climate Target, *WIREs Climate Change*, July-August 2010, 598-605, doi 10.1002/wcc.62.

Alan D. Hecht and Dennis Tirpak, "Framework agreement on climate change: A Scientific and Policy History," *Climatic Change* 29:4, 371-402.

Somerville, R. C. J., 2011. The co-evolution of climate models and the Intergovernmental Panel on Climate Change. The development of atmospheric general circulation models : complexity, synthesis, and computation. (Donner L, Schubert WH, Somerville R, Eds.):225-252., Cambridge ; New York: Cambridge University Press.

Week 5 [February 5] Precautionary principles, intergenerational ethics, and developmental rights in the climate brew

Jamieson, chapter 5 and 6.

Nordhaus: chapter 16, 18-20.

Laudato Si (aka the Papal Encyclical on Care for our Common Home)

Key excerpts here: <https://www.washingtonpost.com/news/acts-of-faith/wp/2015/06/18/10-key-excerpts-from-pope-franciss-encyclical-on-the-environment/>

James R Fleming Testimony to US House of Representatives, "Historical Perspectives on Fixing the Sky," November 5, 2009.
http://www.geoengineeringwatch.org/documents/Fleming_Testimony.pdf

Week 6 [February 12]: Assignment 3 Due.

How we got here: the Fossilization of Energy

David E. Nye, *Consuming Power: A Social History of American Energies* (Cambridge, MIT Press, 1998), introduction and Chapter 9.

Christopher F. Jones, *Routes of Power: Energy and Modern America* (Cambridge: Harvard University Press, 2014), introduction and chapter 6.

<http://thinkprogress.org/climate/2013/11/04/2882671/nuclear-power-climate/>

Peter A. Bradford, "How to close the US nuclear industry: Do nothing," *Bulletin of the Atomic Scientists* March/April 2013 69: 12-21.

Week 7 [February 19] U.S. Energy and Climate Policies

Moving backward: Kyoto Withdrawal and "All of the Above"

Loren Cass, *The Failures of American and European Climate Policy* (SUNY Press, 2006), chapter 5.

Massachusetts et.al. vs. EPA, No. 05-1120, April 2, 2007.

Howard Geller, et.al., "Policies for increasing energy efficiency: Thirty years of experience in OECD countries," *Energy Policy*, 34:5, 556-573.

Week 8 [February 26]: The De-Fossilization of Energy (?)

Mackay, *Sustainable Energy—Without the Hot Air*. Available at: www.withouthotair.com. (The ten-page synopsis given here is the required reading, but I'd suggest spending a little more time than that—chapter 30's important!)

S. Pacala & R. Socolow, "Stabilization Wedges: Solving the Climate Problem for the Next 50 years with current technologies," *Science* 13 Aug 2004, 968-972.

Mark Z. Jacobson's <http://thesolutionsproject.org/>

Week 9 [March 4]: The Paris Accord

Victor and Kennel: Climate Policy: Ditch the 2C warming goal, *Nature*, 01 October 2014.

<http://insideclimateneeds.org/news/09122015/cop21-paris-limit-global-warming-2-degrees-or-1.5-climate-negotiators-wrestle-with-dangers-of-half-degree>

Reto Knutti et.al. "A scientific critique of the two-degree climate change target," *Nature Geoscience* (2015), doi: 10.1039/ngeo2595.

Sabine Fuss, "Betting on Negative Emissions," *Nature Climate Change* 4 (2014), doi:10.1048/nclimate2392.

The Collapse of Western Civilization: A View from the Future

Week 10 [March 11]: Assignment #4 Due! Student Presentations

References and Additional Readings

Maxwell T. Boykoff, *Who Speaks for the Climate? Making Sense of Media Reporting on Climate Change* (Cambridge University Press, 2011).

Loren R. Cass, "The Failures of American and European Climate Policy: International Norms, Domestic Politics, and unachievable commitments (SUNY Press, 2006).

Herman Daly, *Beyond Growth: The Economics of Sustainable Development* (Beacon Press, 1997).

Herman Daly and Kenneth N. Townsend, eds., *Valuing the Earth: Economics, Ecology, Ethics* (MIT Press, 1993).

Paul N Edwards, *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming* (MIT Press, 2010).

Kerry Emanuel, *What we Know About Climate Change* (MIT Press, 2007).

Pope Francis, *Laudato Si—On Care for our Common Home*. Melville House, July 23, 2015.

Rodger Fleming, *Historical Perspectives on Climate Change* (NY: Oxford, 1998). MacKay, *Sustainable Energy without the Hot Air*. (Online text).

James R. Fleming, *The Callendar Effect: The Life and Work of Guy Stewart Callendar (1898-1964)* (American Meteorological Society, 2007).

James R. Fleming, *Fixing the Sky: The Checkered History of Weather and Climate Control* (Columbia University Press, 2010).

James E. Hansen, *Storms of My Grand Children* (NY: Bloomsbury, 2009). Mike Hulme, *Can Science fix Climate Change?* (Polity Press, 2014).

John Imbrie and Katherine Palmer Imbrie, *Ice Ages: Solving the Mystery* (Harvard University Press, 1979).

Dale Jamieson, *Reason in a dark time: Why the Struggle against Climate Change Failed—and what it means for our future*, Oxford University Press, 2014.

Dale Jamieson, *Ethics and the Environment* (Cambridge University Press, 2008).

Christopher F. Jones, *Routes of Power: Energy and Modern America* (Cambridge: Harvard University Press, 2014)

David Keith, *A Case for Climate Engineering* (MIT Press, 2013).

Naomi Klein, *This Changes Everything* (Simon & Schuster, 2015)

David MacKay, *Sustainable Energy without the Hot Air*, UIT, 2008.

Clark A. Miller and Paul N. Edwards, eds, *Changing the Atmosphere: Expert Knowledge and Environmental Governance* (MIT Press, 2001).

Irving Mintzer and J. Amber Leonard, eds.; *Negotiating Climate Change: The inside story of the Rio Convention* (Cambridge University Press, 1994). Nordhaus, *The Climate Casino: Risk, Uncertainty and Economics for a Warming World* (Yale University Press) 2015.

William Nordhaus, *A Question of Balance* (Yale University Press, 2008).

David E. Nye, *Consuming Power: A Social History of American Energies* (Cambridge, MIT Press, 1998).

Naomi Oreskes and Erik M. Conway, *Merchants of Doubt* (Bloomsbury USA), 2010.

Henry Pollack, *A World Without Ice* (Avery Group, 2009).

William F. Ruddiman, *Plows, Plagues and Petroleum: How Humans Took Control of Climate* (Princeton University Press, 2005).

Jeffrey D. Sacks, *The Age of Sustainable Development* (Columbia University Press, 2015).

Gus Speth, *The Bridge at the end of the World: Capitalism, the Environment, and Crossing from Crisis to Sustainability* (Yale University Press, 2009).

Spencer Weart, *The Discovery of Global Warming* (online text).