

PHIL 209C
Heated Debates:
Philosophy and Climate Change
Fall 2014
Syllabus

Instructor: Mathias Frisch

e-mail: mfrisch@umd.edu

Office hours: Mo We 12-1 and by appointment in 1122A Skinner

Teaching Assistant: Kelsey Gipe

e-mail: gipe.kelsey@gmail.com

Office Hours: TBA

Canvas is the internet-platform associated with this course. I organized the topics of the course into **modules** ranging between one and three weeks in length. In each module you will find all the material you will need for the weeks in question:

- Reading assignments from our textbooks.
- pdf files or links to other readings or video clips I would like you to watch.
- PowerPoint slides for many lectures.
- Quizzes.

A lot of this content also appears in other places on the course site – but I think the easiest is simply to access content through the modules.

Required Textbooks:

- *Introduction to Modern Climate Change* by Andrew Dessler, Cambridge University Press, 2012. ISBN 978-0-521-17315-5. **(Dessler)**
An accessible introduction to the science of climate change and to climate politics. This will be our main textbook for the first part of the course, when we will look at the science behind climate change, and we will return to it during the last couple of weeks of the semester, when we discuss possible policy responses.
- *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* by Naomi Oreskes and Eric Conway, Bloomsbury Press. 2010.
We will be reading the chapters on smoking and on global warming together with the introduction and conclusion (all available as pdf on Canvas), but the entire book is well worth reading.
- *Climate Matters: Ethics in a Warming World* by John Broome. Norton & Co. 2012.
We will be reading large sections of the book and I put the entire text of the book on Canvas. But some of you might want to purchase the book, either as e-book or on paper, since the formatting of the copy I am making available is not optimal.

Additional required reading material is posted on Canvas for each module.

Course overview:

At the same time that the scientific evidence for human-induced climate change continues to increase, there continues to be vocal skepticism, at least among some groups of people, concerning the sources and even the reality of climate change. We will use different philosophical views on the scientific method and on reasoning under uncertainty to examine and analyze some of the sources of this skepticism. We will learn how we as non-experts can try to decide what does and what does not count as a legitimate contribution to a scientific debate. To address these questions we will try to understand various steps in the creation of scientific knowledge and will aim to develop tools that can help us to navigate the often confusing multitude of claims and counterclaims concerning the status of the science of climate change made in the press, in the blogosphere, and by politicians. We will also look closely at the interplay of science and public policy and at the role of values in science. Finally we will examine ethical problems raised by climate change, including the following: what are our responsibilities toward future generations and how do we take these into account? Who has a right to what emission levels? How do we negotiate between collective and individual self-interests?

The aims of this course are the following:

- To provide you with an understanding of the basics of climate science;
- To use the history of climate science as a case study to introduce you to some of the ways in which philosophers think about scientific theories;
- To enable you to use both the scientific and the methodological lessons we learn to evaluate the arguments of climate change deniers critically;
- To analyze and understand some of the ethical challenges created by a problem with global reach such as climate change.

Module 1: Introduction

Topic: An introduction to the climate problem.

Objectives: Understanding some of the basic concepts concerning climate change.

Readings: • Dessler, ch. 1 “An introduction to the climate problem”;

Module 2: Climate Science

Topic: The basics of climate science.

Objectives: Begin to understand the most basic mechanisms of climate change; Examine the history of climate science with an eye on general features of scientific theorizing.

Analyze some of the claims of climate skeptics.

Readings: • Dessler, chs. 2-5; (recommended background reading: ch. 13)

We will focus mainly on Dessler in class, but begin reading Weart for the discussion in subsequent weeks.

Module 3: The Carbon Cycle and our Carbon Footprint

Topic: Continuation of our discussion of climate science.
How to estimate and calculate your carbon footprint.

Objectives: To understand human impact on the climate system, both on a global and on a personal scale.

Module 4: A brief introduction to the philosophy of science using the history of climate science as case study

Topic: Philosophical views on scientific theorizing.

Objectives: Examine how our scientific understanding of the climate system evolved historically;
Use the development of climate science as case study to understand basic aspects of “the scientific method”.
A first look at how the philosophy of science might help understand the challenge presented by global warming skeptics and deniers.

Readings:

- Karl Popper, “Conjectures and Refutations”;
- Philip Kitcher, “Believing Where We Cannot Prove”.
- **Weart**, chs. 4-6
- Short opinion pieces by climate skeptics and denialists, including:
 - Sadar and Cammarata, “Unforeseen Climate Crisis”:
<http://www.washingtontimes.com/news/2009/nov/20/unforeseen-climate-crisis/>
 - George Will on the summer temperatures:
<https://www.youtube.com/watch?v=MzeLPFGPuqI>
 - Senator James Inhofe (R-OK), the lead Republican on the Senate Committee on Environment and Public Works:
http://www.youtube.com/watch?feature=player_embedded&v=EKd6UJPghUs#!
 - Sen. Rick Santorum: <http://www.nationaljournal.com/2012-presidential-campaign/santorum-global-warming-not-scientifically-proven--20120219>
 - Sen. Ron Johnson: <http://www.desmogblog.com/wisconsin-gop-senate-candidate-ron-johnson-says-climate-change-unproven>

Module 4: Climate science, models and sources of uncertainty

Topic: Uncertainty in science and in particular in climate modeling

Objectives: Understand sources of uncertainty science in general and in climate modeling in particular.

Readings:

- **Dessler**, chs. 6-7
- Bradley, “Scientific Uncertainty: A user’s guide”.
- Maslin and Austin, “Uncertainty: Climate Models at their Limit?”

Additional reading: • Knutti, et. al., “A Review of Uncertainties in Global Temperature Projections over the Twenty-First Century”

Module 5: Uncertainty and climate change skeptics

Topic: Appeals to uncertainty as skeptical strategy.

Objectives: Analyze and evaluate strategies and arguments of climate change skeptics and the role of uncertainty in climate predictions.

Readings:

- **Naomi Oreskes and Eric Conway**, *Merchants of Doubt*. “Introduction”, Chapters 5 & 6, “Conclusion”, “Epilogue”
- Douglas, “Bullshit in Science Policy”.
- Dyson, “The Science and Politics of Climate”;

Module 6: Climate Ethics:

Topic: Ethical problems raised by climate change

Objectives: Analyze different arguments concerning who has a responsibility to act and why

Analyze the problem of climate change as an issue of global justice
Critically examine the role of individual responsibility.

Readings:

- Gardiner, “Ethics and Global Climate Change”;
- Singer: “One Atmosphere”
- Shue: “Exit Strategies”
- The case of the Easter Islands

Module 8: Ethics and individual responsibility:

Topic: How to get from scientific predictions to policy recommendations

Objectives: Critically examine various strategies, such as cost-benefit analysis, for arriving at climate policies based on the predictions of climate models.

Readings:

- Broome, “The Ethics of Climate Change”;
- **Broome**: *Climate Matters*, ch. 4&5
- Michael Pollan

Revised Personal Carbon Footprint Calculation and Discussion!

Module 9: Ethics, economics, and public policy

Readings:

- **Dessler** chs. 8-12; 14
- **Broome**, ch. 6-8

Recommended: Lempert: “Robust Strategies for abating climate change”

Assessment:

1) Ten (10) out of fourteen short online quizzes. The first group of quizzes will test your understanding of the basics of climate science; later quizzes will be reading comprehension quizzes or ask you to write a short paragraph about the week’s reading. Quizzes will be due **Mondays before class**. The quizzes have to be submitted online, in response to an assignment or quiz prompt. The aim of these

- quizzes is to help you to come to class prepared, with the week's reading done in advance, and to help you to become active learners. Active learning is important in every discipline, but in philosophy it is perhaps even more important than in some others. The only way to learn philosophy is through 'doing'—through actively thinking through the issues we will examine and argue with the texts, with each other. When you are asked to write a paragraph on the week's readings, you should summarize what you take to be an especially important point of the readings, ask a thoughtful question about a part that you found particularly puzzling (explaining why and what you found puzzling), or perhaps briefly point to interesting connections you see between the week's reading and others texts we have examined. You can get a maximum of 100 points on the 10 best contributions of yours. (That is, you only need to do 10 out of perhaps 14 assignments in the semester. Since there will be many opportunities to make up missed weeks, we will not accept late contributions for any reasons.) 10%
- 2) Participation in the face-to-face discussion sections and on the facebook group. 10%. I have set up a facebook group for our course. In order to join, you have to join "groups in Maryland" at <https://www.facebook.com/groups/groupsatmaryland>
You can then request to join our group "Heated Debates: PHIL209C Spring 2014." <https://www.facebook.com/groups/phil209C.spring2014/>
The aim of the facebook group is to provide a forum where we can all post and discuss interesting current posts, articles, or discussions of climate change. You might post a reference to a new scientific finding, a policy discussion, a skeptical argument, etc. For maximum credit, you should not merely post, but also engage and discuss posts of others.
 - 3) Calculate and discuss your personal carbon footprint. What is your carbon footprint for a week? What is it for a year? How does that compare to other Americans? To people in India? In a less developed country? How could you reduce your footprint? Calculation and discussion to be submitted online. 15%
 - 4) A five- to seven-page paper on an issue in the philosophy of science. Due March 3, 12 p.m. 15%.
 - 5) A five- to seven-page paper on the ethics of climate change. Due May 12, 12 p.m. 15%.
 - 6) A midterm (15%) and a final exam (20%).