Description
Global warming. Overfishing. The hole in the ozone layer. Mass Extinction. Nuclear winter. Since the mid-nineteenth century, the earth and environmental sciences have played a central role in cultural and political debates about potential threats to the planet and the influence of humanity on the earth’s natural systems. At the same time, they have also been crucial in exploring, harnessing, understanding, and safeguarding our home. This course explores this longstanding tension between control and catastrophe.

We will focus on four major questions cutting across several scientific disciplines: the history and future of the earth, the exploitation and conservation of natural resources, predicting and influencing the weather, and the earth as home. In each of these units, we will look at several decades of discovery and debate. We will ask how evidence about the earth’s past, present, or future is presented, what kinds of predictive tools are seen as trustworthy, and the nature of scientific (and cultural) consensus.

Assignments
Every student must read all readings for the weekly discussion section and participate actively and often. Two persuasive essays in the form of newspaper Op-Eds will be due in section at the end of the first and third units; prompts will be given from material covered in class. There will be an in-class midterm exam on February 25th covering the first half of the course. A final exam will be held on May 7th at 2:00 pm. (In special cases students may instead write a research paper. Advance approval will be required by April 1st.)

Your grade will be determined as follows:
- Section participation 20%
- Op-eds 20%
- Midterm Exam 25%
- Final Exam 35%

Laptops and Cell Phones
Our classroom is like an airplane cruising at 35,000 feet. If you want to use any gadgets, gizmos, or other electronics, turn the wireless functions off. If you don’t, you’ll be distracted, and you’ll distract your neighbors. It’s inevitable, and it’s rude. So use your laptops for taking notes only; cell phones can be used as clocks, paperweights, or flashlights.
SCHEDULE

Note:
All readings are required. Readings will be discussed in section after each week’s lectures.
Books marked with an asterisk (*) will be placed on reserve, but should be purchased if possible.
All other readings will be available on the website.

Be sure to check www.bookfinder.com for best prices (new and used).

January 14: Introduction

PART I: THE HISTORY AND FUTURE OF THE EARTH

Week 1 – The Controversy of Deep Time
January 16: Fossils and the Flood
January 18: Catastrophe and Uniformity
NOTE: No section this week. Readings will be discussed next week.

Week 2 – The Age of the Earth Debates
January 23: Darwin, Thomson, and Radioactivity
NOTE: Section this week will cover all the readings for weeks 1 and 2.

Week 3 – Neo-Uniformitarianism and Neo-Catastrophism
January 28: Continental Drift and Its Discontents
January 30: Plate Tectonics, Mass Extinctions, and Evidence
– OP-ED DUE IN SECTION THIS WEEK –
PART II: EXPLOITATION AND CONSERVATION OF RESOURCES

Week 4 – Scientific Exploration of Land and Sea
  February 4: Science and Capitalism
  February 6: The Earth Sciences as a Government Service
Paul Lucier, Scientists and Swindlers: Consulting On Coal and Oil in America, 1820–1890
  (Baltimore: Johns Hopkins University Press, 2008), introduction, chapter 1, chapter 10, and epilogue.
Helen Rozwadowski, Fathoming the Ocean: The Discovery and Exploration of the Deep Sea
  (Cambridge: Harvard University Press, 2005). Read the conclusion first, then chapters 2 and 3.

Week 5 – The Bounty and Crisis of the Sea
  February 11: Salmon – The Fish are Gone, Can Science Save Us?
  February 13: Cod and Tuna – Quotas, Territory, and Uncertainty
* Joseph E. Taylor III, Making Salmon: An Environmental History of the Northwest Fisheries Crisis
  (Seattle: University of Washington Press, 1999), preface, introduction, chapters 3, 4, 7, and 8.

Week 6 – The Finitude of Fossil Fuels
  February 18: Petroleum Geology and Mineral Rights
  February 20: Peak Oil

Week 7
  February 25: MIDTERM EXAM
PART III: PREDICTING AND INFLUENCING THE WEATHER

February 27: Weather Maps and Data Overload

Week 8 – Predicting the Weather
March 4: The Determinists’ Dream
March 6: Numerical Forecasting and the Limits of Predictability

SPRING BREAK

Week 9 – Global Warming
March 25: The Greenhouse Effect, From Ice Ages to Global Warming
March 27: Skeptics, Economics, and Social Construction
– OP-ED DUE IN SECTION THIS WEEK –
PART IV: EARTH AS HOME

Week 10 – Biogeography
   April 1: The Humboldtian Embrace of Nature
   April 3: Wallace, Darwin, and Evolutionary Geography

Week 11 – Ecology
   April 8: Cooperation or Competition?
   April 10: The Eternal Optimism of Human Ecology

Week 12 – Planetary Unity and Planetary Destruction
   April 15: Pollution, Risk, and Environmentalism (Guest lecture by Rachel Rothchild)
   April 17: The Ozone Hole, Nuclear Winter, and the Age of Catastrophe

April 22: Where Do We Go From Here?

– FINAL EXAM ON MAY 7, 2:00 PM –