

# ***Climate Change Science Syllabus***

This class explores the scientific basis for an understanding of climate change. It begins with a study of how fundamental observations and scientific principles have shaped our understanding of the atmosphere, chemical cycles, and the anthropogenic influence on global climate. Climate model development and the interpretation of their results are discussed in the context of their influence in the creation of climate policy. We have two texts and one paper to read during the course. All reading assignments are due before the lectures.

## **Readings**

- Houghton. *Global Warming: the Complete Briefing* (CU bookstore)
- Goody and Walker. *Atmospheres* (bound photocopy volume)
- Ramanathan et al. 1989. Climate and the Earth's Radiation Budget, *Physics Today* (handout)

## **Course Outline**

Lecture 1	Climate Change Science Readings: Houghton Ch.1
Lecture 2	The Physical Structure of the Atmosphere Readings: Goody and Walker Ch. 1
Lecture 3	Atmospheric Temperatures Readings: Goody and Walker Ch. 3, Houghton Ch. 2
Lecture 4	The Origin, Evolution, and Cycles of the Atmosphere Readings: Goody and Walker Ch.6, Houghton Ch. 3-4
Lecture 5	Clouds and Global Winds Readings: Goody and Walker Ch. 4-5
Lecture 6	Climate Modeling Readings: Houghton Ch. 5, Ramanathan et al. 1989
Lecture 7	Scientific Results of Climate Change Studies Readings: Houghton Ch. 6, NAS Study, WGI Summary
Lecture 8	The Impacts of Climate Change Readings: Houghton Ch 7-8, WGII Summary