Climate Change:

Scientific, Political, and Economic Analysis

Instructor: Josh Moss

This class will explore the scientific, political, and economic ramifications of climate change. We will start by discussing the scientific evidence establishing that climate change is real and caused in large part by human activity. We’ll also discuss the cutting-edge research going on in the fields of climatology, atmospheric chemistry, and renewable energy research. The latter half of the class will focus on understanding what the predicted impacts of climate change are on the global economy including food prices, heating and cooling costs, and energy availability. Lastly, we will discuss how climate change became a politicized issue and what global governments may need to do in order to fight it. The class will culminate in a mock intergovernmental scenario in which the students will discuss and vote on different climate change mitigation strategies.

**Objectives:**

1. Understand the science behind climate change analysis and why 97% of scientists agree that climate change is caused primarily by human activity.
2. Improve data analysis skills so that students will be able to look at data in the future and make their own informed decisions.
3. Understand the economic ramifications of not attempting to mitigate climate change effects.
4. Understand why climate change has become so politicized and why intergovernmental action is required to deal with climate change.

**Schedule:**

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| **Week** | **Topic** |
| 1 | Introduction and General Scientific Background |
| 2 | What Climate(s) to Expect in the Future |
| 3 | Atmospheric Chemistry and Climate Change |
| 4 | Mitigation Strategies and New Energy Sources |
| 5 | Why is Climate Change a Political Issue? |
| 6 | Geoengineering: Crazy or Necessary? |
| 7 | Mock Intergovernmental Scenario |

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| *Week 1:* | This week will focus on understanding the scientific principles involved in climate change research and will also examine some of the state of the art techniques currently being used in labs around the world. |
| *Week 2:* | We will focus on future climate predictions and the conditions we can expect in a future Earth both with and without climate change mitigation. |
| *Week 3:* | Although atmospheric climate effects can largely be characterized by the greenhouse effect, we will examine other aspects related to atmospheric climatology such as aerosol formation and the ozone hole. |
| *Week 4:* | This week we will examine the economic implications of climate change and possible viable mitigation strategies involving renewable energy sources. |
| *Week 5:* | Many scientific issues lead to polarizing political debate, but perhaps none more so in recent history than climate change. This week we will focus on understanding the political debate surrounding climate change in both the U.S. and the global community at large. |
| *Week 6:* | Geoengineering is a highly polarizing term in the climate change community and refers to a deliberate attempt to drastically alter our climate to reverse negative climate change effects. This idea has been called insane, but is it our only hope? |
| *Week 7:* | The students will take part in a mock intergovernmental panel where they will debate and vote on different climate change proposals inspired by past conventions such as the Paris Climate talks in 2015. |