

# **GEOG 207: Climate Change Fundamentals**

Spring 2019 (ONLINE)

Dr. Scott Moron – [sdmorton@uwaterloo.ca](mailto:sdmorton@uwaterloo.ca)

## **Course Description**

Climate change is one of the most profound environmental and social issues affecting communities, nations and individuals. This course is an introduction to this global challenge, including its scientific underpinnings, history, potential impacts on natural systems and human societies around the world, and two societal responses: adaptation and greenhouse gas mitigation. Opportunities to develop sustainable resilient communities, as well as Canadian climate change policy responses will be highlighted.

The goal of this course is to provide students of any discipline with the fundamentals of climate change: both biophysical and human dimensions. This course will be delivered entirely online, and will provide students with an opportunity to hone science communication skills, explore sources of scientific uncertainty, political complexities, and equity implications of this global challenge.

Climate change is a pervasive and challenging phenomenon that can be viewed through a multitude of lenses. A scientific lens, for instance, reveals altered ecosystems and climatic tipping points while the lens of ethics raises the question of the right to develop and influence the well-being of others while doing so. By carefully laying the scientific foundations, we will explore creative, positive, nuanced visions of the future that are rooted in scientific understanding of earth systems but also capture (or at least begins a conversation about) core human values, such as equity, compassion, innovation, and connection. A wider variety of actors are increasingly taking action on climate change, or bear some responsibility for doing so, giving us the opportunity to analyze coordinated, effective responses that go beyond international negotiations.

This course is intended for undergraduate students of all backgrounds (arts, social sciences, and sciences) who wish to explore the biophysical and human dimensions of climate change. The course will also help students to hone their abilities to communicate potential solutions to others.

## Learning Outcomes

Through a deeply interdisciplinary approach and with an emphasis on fostering effective communication skills, successful students in this course will:

- Demonstrate understanding of key elements of the climate system, and how these elements are being altered by the human emission of greenhouse gases.
- Carefully consider the impacts of climate change on both human and natural systems.
- Articulate the difference between climate change adaptation and mitigation, and understand a portfolio of actions that communities can take to respond to climate change.
- Understand the key issues at play in international climate change negotiations, as well as recent Canadian policy proposals.
- Investigate futures that are fundamentally sustainable, low-carbon, and resilient to climate change impacts.

*This online course was developed by Sarah Burch, with instructional design and multimedia development support provided by the Centre for Extended Learning. Further media production was provided by Instructional Technologies and Multimedia Services.*