

COURSE ANNOUNCEMENT

RMES-500G: Climate Change: Global Challenges and Local Responses

Dr. Milind Kandlikar and Dr. Hisham Zerriffi

Winter Session 2010 (Term 1), M-W 10:30 AM to 12:00 PM

Liu Institute for Global Issues (Room 121)

Enrolment: Graduate Students (or advanced undergraduates with instructor approval)

Climate Change has emerged as the most complex environmental challenge facing the planet. On the one hand, changes in global climate are likely to have significant impacts in many parts of the world, and while a small number of regions / sectors may benefit many others could be devastated. On the other hand, reducing greenhouse gas emissions poses significant technological, economic and political challenges. Reductions of greenhouse gas gases will be made in the presence of incomplete information and continued scientific and economic uncertainty. Changes in human behaviour and technological innovations of the magnitude needed to significantly reduce greenhouse gas emissions may be difficult to achieve. This course focuses on how the global challenge results in local effects and local opportunities and challenges. It will provide students with a 'hands-on' perspective on local responses.

The course will consist of five modules:

- **Module 1** provides a **general overview of climate science and impacts**, highlighting the current state of knowledge and remaining uncertainties.
- **Module 2** focuses on **carbon management options**: mitigation and energy system changes and efficiency options. This module will include a simulation exercise in which students can choose from a range of options for reducing greenhouse gas emissions.
- **Module 3** will examine **geo-engineering management options** that may be considered if carbon management is not timely or sufficient enough to avoid major climate impacts. Technology options (e.g. carbon capture and sequestration, iron fertilization of oceans), risk management issues and policy responses will be discussed.
- **Module 4** on **vulnerability and adaptation** will look at how different populations are at risk of climate change impacts and the options available and requirements for successful adaptation.
- **Module 5** related to **carbon economics** will cover the various ways in which the externality of greenhouse gas emissions gets monetized, including taxes, cap and trade systems and international transfers.

Each of these modules will include background readings and a case study developed and run by the students. Students will work in groups to either develop a new case study or modify an existing case and then lead the class for a session. Cases will be oriented towards climate change challenges facing British Columbians. By the end of this course, students should have a strong understanding of the fundamental climate change issues ranging from the basic science through technology options and economic impacts. The cases will provide students the opportunity to examine global issues in a very specific and local context and learn how to analyze these problems.

There is no single text for this course. Readings will come from a variety of articles, books and reports including the latest report of the Inter-Governmental Panel on Climate Change.



UNIVERSITY OF
BRITISH COLUMBIA

6476 NW MARINE DRIVE
VANCOUVER BC
CANADA V6T 1Z2

www.ligi.ubc.ca