GRADUATE COURSE SYLLABUS
University of Toronto at Scarborough
“CLIMATE CHANGE ADAPTATION”
(EES1136HS - Thursday 9:00 am to 11:00am, AA204)

Course Director
Dr. J. I. MacLellan
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Office Hours Wednesdays 11:00am to 12:00pm or by appointment.

Course Lecturers
Dr. N. Klenk (nicole.klenk@utoronto.ca)
Dr. Q. Chiotti (Quentin.Chiotti@Metrolinx.com)

Tutorial Assistant
PhD Candidate, Brian Pentz (brian.pentz@mail.utoronto.ca)
Note: If you have any questions about the course, or the assignments, please communicate with our TA, Brian Pentz.

Overview
Climate change represents one of the most profound environmental challenges facing modern society. This course will explore adaptations or ‘adjustment(s) in natural or human systems’ to actual and/or expected climatic stimuli and their effects, whose purpose is to minimize harmful, and/or maximize beneficial opportunities (IPCC, 2001). Though identified as a priority of national and international organizations, as codified in the United Nations Framework Convention on Climate Change (1992), the ambiguity and inclusivity of the adaptation concept hints at inherent difficulties in its operationalization. The general aim of the course is therefore to provide a broad overview of the various scientific, social, economic, cultural, and environmental perspectives on climatic change and its’ impacts, so as to create a foundation from which potential adaptive responses can be evaluated both domestically and internationally.

Purpose and Objectives of the Course
The relationship between human knowledge and human agency lies at the core of the challenges posed by climate change. This course is intended to provide a critical overview of current understanding regarding climate change with particular attention paid towards the practical implementation or facilitation of climate change adaptation (i.e. actions intended to reduce the vulnerability of natural and human systems to climatic variability). Specific course objectives include:

1. The provision of a broad overview of the co-evolution of climate modeling, policy development and decision support.
2. The provision of a broad overview of the range of social, economic, and biophysical impacts of climate change.
3. The provision of a critical understanding of the concepts of the climate change mitigation and adaptation in the context of sustainable development.
4. The provision of a framework for the integration of the basic components of a climate change adaptation decision support system.
5. Establishing the foundations of a critical evaluation of governance frameworks in the context of climate change adaptation.

Organization of the Course
In this course students will learn how the perception of, and response to, climate change has evolved though time. They will further learn how adaptation to climate change is implemented by civil society groups and governments across international, national and regional scales.

- Given the inherent complexity of climate change adaptation, we employ an historical approach to contextualize our collective understanding of this modern challenge; practical lessons-learnt will be identified and used to examine the science\policy interface with respect to communication and collaboration, between and among, scientists, government bureaucrats and stakeholders.
- Concurrently, students will be introduced to the theoretical underpinnings of climate adaptation science through a series of lectures as presented by: Dr. MacLellan, Dr. Nicole Klenk and Dr. Quentin Chiotti. Course instructors have direct experience with the science and implementation of climate change adaptation, within Canada and abroad. Lecture sessions will include time for discussion, and may be supplemented by films and videos.
- Finally, case studies ranging from vulnerability assessments and local adaptation planning in Canada, to the IPCC’s contributions to knowledge synthesis, will be used to facilitate a better understanding of the nuances of adaptation science and practice. Voluntary labs will be offered: short lectures pertaining to the assignments will be given; and assistance provided for completing the assignments.

Evaluation
Given the aims and organization of this course, students will be evaluated according to their comprehension of the lecture material, as well as their ability to synthesize and integrate the major conceptual features of adaptation science into an actual, spatially situated, adaptation plan.

Comprehension will be directly assessed by means of two exams: a take-home midterm, and a final examination that is scheduled in the final exam period. The ability to develop and implement environmental solutions arguably requires actual exposure to the challenges associated with climate change adaptation implementation. As such, students will also be required to aid in the development of a Vulnerability Assessment, and\or Local Climate Adaptation Plan for a specific locality\community (either within Canada, or internationally situated) to be determined in consultation with the course instructors. This case study project has two components: a proposal (Assignment 1) and a final Local Adaptation Plan for the locality (Assignment 2).

Course evaluation will be based on the following items weighted as indicated:

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<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
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<tr>
<td>#1</td>
<td>15% (due February 9th)</td>
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<tr>
<td>Mid Term Examination</td>
<td>20% (due February 26th)</td>
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<tr>
<td>#2</td>
<td>35% (due prior to last official class: April 5th)</td>
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<tr>
<td>Final Exam</td>
<td>30% (Scheduled in regular winter exam period)</td>
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Participation: Given the complex nature of the topic, and fact that the course is taught by three different experts, class participation is highly recommended. We may also be hosting guest speakers, who will bring their knowledge and experience to bear on course topics; the content of all lectures will be open to examination (midterm and final).

Assignments 1 and 2. As mentioned above, we assume that it is in the process of seeking actual environmental solutions that students and faculty are better able to develop the means of doing so (Tbilisi Declaration 1978). In essence, faculty and students learn together by being exposed to actual case studies. To facilitate this process, a preliminary proposal will be required wherein the student broadly outlines the conditions of the case study they have chosen, keeping in mind that a definitive adaptation plan (vulnerability assessment) is the ultimate end goal of the major project. Work undertaken for the proposal (Assignment 1) can be directly incorporated into the final report.

Exams: The Term Test will be based upon all the material covered in the lectures prior Reading Week. It will also cover the required reading “The Discovery of Global Warming.” The Final Examination will take place during the regularly scheduled examination period following the end of the term. It will cover the material covered in the lectures, including that of guest lecturers.

Required Text
The major text for the course is:


Supplementary Reading
Additional reading materials can easily be obtained from the internet. For the most part, this material has been selected to enrich your understanding of the required material. Much of it is available online


The following journals contain many articles that are directly related to this course:

- Climatic Change
- Mitigation and Adaptation Strategies for Global Change Climate Research
- Global Environmental Change Climate Policy
- Building Research and Information
- Environmental Monitoring and Assessment
- IDS Bulletin
- Forestry Chronicle
- Agriculture, Ecosystems and Environment

Missed Term Work
Late assignments will be subject to a late penalty of 10% per day of the total marks for the assignment.

A Note on Marking:
If you wish to discuss the requirements of this course, including the rubric for marking, please first contact the TA. You can also visit me during office hours; I am typically available throughout the week as well.

Handing In Your Assignment:
The assignments and midterm must be submitted prior to, or on the due date. I do not accept hardcopies, or assignments sent by email - unless you are directed to do so. A pdf of your assignment or exam should be uploaded to BlackBoard before the due date indicated.

Please follow the University of Toronto procedure to be completed in order to be considered for academic accommodation for any course work such as missed tests or late assignments. Verification of Student Illness or Injury forms can be found on the Office of the Registrar’s webpage (http://www.illnessverification.utoronto.ca/getattachment/index/Verification-of-Illness-or-Injury-form-Jan-22-2013.pdf.aspx).

Extension of Time
Students MUST submit a request for extension in ADVANCE of the deadline in order to receive a decision. For extensions of time beyond the examination period you must submit a petition through the Office of the Registrar. http://www.erin.utoronto.ca/index.php?id=6988

Dr. J.I. MacLellan 2018
Department of Physical and Environmental Science
Academic Integrity
The University treats cases of cheating and plagiarism very seriously. The University of Toronto’s Code of Behaviour on Academic Matters (http://www.governingcouncil.utoronto.ca/policies/behaveac.htm) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences.

Potential offences in papers and assignments include using someone else’s ideas or words without appropriate acknowledgement, submitting your own work in more than one course without the permission of the instructor, making up sources or facts, obtaining or providing unauthorized assistance on any assignment. On tests and exams cheating includes using or possessing unauthorized aids, looking at someone else’s answers during an exam or test, misrepresenting your identity, or falsifying or altering any documentation required by the University, including (but not limited to) doctor’s notes.

Please avoid academic dishonesty, have confidence in your own ability to learn and grow academically by doing your own thinking and writing!

Accessibility
Students with diverse learning styles and needs are welcome in this course! In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in SW302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca

Communicating With You
This is a very ‘hands-on’ course; by far the best way to communicate with me is during class and during office hours. From time-to-time I will send email messages or post messages on Blackboard to notify you of changes in schedule and opportunities that you may want to take advantage of. I can only send messages to your U of T e-mail address. If you use another account (gmail, hotmail, yahoo, etc.) make sure that your U of T email is sent to your alternate email account.