

EESD06H3: Climate Change Impact Assessment Winter 2022

Instructor Information:

Tanzina Mohsin

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Office hours: Thursdays: 12:00 to 1:00 pm (Jan 13 to April 7th)

Lectures: Tuesdays 1 to 3 pm (Via Team/zoom)

Tutorials: Tuesdays 3 to 4 pm (Via Team/zoom)

Appointments for one-on-one session can be made by email on any day except Friday.

PLEASE NOTE THAT THE DELIVERY OF THE LECTURE AND TUTORIALS ARE SUBJECT TO CHANGE BASED ON THE DECISION MADE BY THE UNIVERSITY AUTHORITY UNDER COVID SITUATION

Course Description:

Climate change over the last 150 years is reviewed by examining the climate record using both direct measurements and proxy data. The climate change impact assessment formalism is introduced and applied to several examples. Students will learn how to use an impact assessment tool to assess the impacts of future climate using outputs from Global Climate Models (GCMs). Projection of future climate is analyzed using the framework for impact assessment with several case studies. Students will also acquire practical experience in assessing impacts of climate change using IPCC scenarios.

Skills:

You are expected to have skills in the general use of computers, specifically spreadsheet use in excel. You need this to assemble and transfer various data files. Basic statistics and mathematical skills are required: simple arithmetic, algebraic notation, order of operations, statistical tests (parametric and non-parametric) to note a few. You will learn the practical skill of analyzing climate modelled output and its application to Climate Change Impact Assessments (CCIA). You will also develop the critical thinking skills of using Climate Change information to CCIA.

Lecture Schedule: - Topics (tentative, may change to accommodate special topics/lectures)

- ❖ Week 1 – Introduction to Climate Science and CCIA
- ❖ Week 2 – Climate Modelling and CCIA formalism
- ❖ Week 3– CCIA tool and Climate Change Scenarios
- ❖ Week 4 – Climate change impact assessment AR4, AR5 and AR6
- ❖ Week 5 – Application of CCIA – focus COP

- ❖ Week 6 – More application on CCIA
- ❖ Week 7- Reading week
- ❖ Week 8- COP26 and net zero emission
- ❖ Week 9 – Midterm (tentative)- must not miss the test as there is usually no makeup
- ❖ Week 10– IPCC Lecture (Linking AR6 and the IPCC Science)
- ❖ Week 11 – Debate
- ❖ Week 12 – Debate
- ❖ Week 13 - Debate

Tutorial Schedule (participation mark is assigned for attendance)***

- Lab 1- Jan 25: Practice of CCIA tool and Assignment # 1 is assigned
- Lab 2 -Feb 1: Assignment#1 is due and Assignment#2 is assigned
- Lab 3- Feb 8: Work on Assignment#2
- Lab 4- Feb 15: Assignment #2 is due and Assignment#3 is assigned
- **The first report for Assignments is due on March 4th**
- Lab 5- March 1st: Work on Assignment#3
- Lab 6- March 8th: Assignment#3 Q/A
- **The final report of all Assignments is due on March 11th**

*****Please note that these dates are tentative, for to give you an idea about the due dates and can be subject to change to fit the midterm or lab and debate schedule. SO DO NOT REFER TO THESE DATES.**

Evaluation (grades breakdown):

Assignments (3)	30%
Participation	15% (TUTORIAL ATTENDENCE + PARTICIPATION)
Midterm	30%
Debate	25%

Midterm (2.5 hours) will occur in class (in-person if we are back in February) on FIRST OR SECOND WEEK OF MARCH which is tentative due to SCHEDULING ISSUE. It is worth noting that the assignments are weighed equivalent to the other evaluation elements in the course which clarifies the importance of the assignments and the attendance in labs.

Detail of the debates will be discussed in class.

Text Book:

Although no text book has been assigned to this course, the following readings are recommended, which will be helpful to understand the course materials.

Copy right: The materials used in this course are copyrighted. These materials include but are not limited to syllabi, exams, lab problems, in-class lecture materials, and

assignments. Because these materials are copy righted, you do not have the right to copy or share any content with anyone except the students in the course without the permission of the instructor. In addition the password for the climate modelling website shared with the students should be distributed to any individual or institute without the permission on the Instructor.

Suggested Readings

Climate Change 2021, 2013, The Physical Science Basis (IPCC Report, Fifth and Sixth Assessment)

Climate Change 2021 (only draft), 2013 Impacts, Adaptations and Vulnerability (IPCC Reports)

Must read research articles- will be posted on Quercus throughout the course.

All lectures with supplementary (explanatory) material will be posted on the course website.

Missed Work:

- A **penalty of 10%** per day for any late assignment
- Be wary of the fine line between working together and plagiarizing
- Medical documentation is needed if you require an extension due to sickness

Accessibility Needs

The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact The UTSC Accessibility Services as soon as possible: <http://www.utsctoronto.ca/~ability/>

We also suggest you also refer to the following University of Toronto Scarborough Library link:

<http://utsclibrary.utoronto.ca/services-persons-disabilities>

Plagiarism

University of Toronto code of Behavior on Academic Matters states that "it shall be an offense for a student knowingly: to represent as one's own any idea or expression of an idea or work of another in any academic examination or term test or in connection with any other form of academic work, i.e., to commit plagiarism."

For accepted methods of standard documentation formats, including electronic citation of internet sources please see the UofT writing website at: <http://www.writing.utoronto.ca/advice/using-sources/documentation>

The full Code of Behavior regulations could be found from consulting

<http://www.sgs.utoronto.ca/facultyandstaff/Pages/Academic-Integrity.aspx>

WRITING AND ENGLISH LANGUAGE

As well as the faculty writing support, please see English Language and writing support at University of Toronto: <http://www.sgs.utoronto.ca/currentstudents/Pages/English-Language-and-Writing-Support.aspx> Students have commented that they found the latter address extremely helpful for writing term papers.

