

EESD06: Climate Change Impact Assessment Winter 2023

Instructor Information:

Ana Zaknic-Catovic

E-mail: ana.zaknic.catovic@utoronto.ca

Office hours: Tuesdays: 11:30 to 12:0 pm (Jan 17 to April 4th)

Lectures: Tuesdays 1 to 3 pm

Tutorials: Tuesdays 3 to 4 pm

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). The projection of future climate is analyzed using the framework for impact assessment with several case studies. Students will also acquire practical experience in assessing the 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, and statistical tests (parametric and non-parametric) to note a few. You will learn the practical skill of analyzing climate-modeled 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) ***

- o Lab 1- Jan 24: Practice of CCIA tool and Assignment # 1 is assigned
- o Lab 2 -Jan 31: Assignment#1 is due, and Assignment#2 is assigned
- o Lab 3- Feb 7: Work on Assignment#2
- o Lab 4- Feb 14: Assignment #2 is due, and Assignment#3 is assigned
- o First report for Assignments is due on March 3
- o Lab 5- Feb 28: Work on Assignment#3
- o Lab 6- March 7: Assignment#3 Q/A
- o Final report of all Assignments is due on March 10

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

Evaluation (grades breakdown):

Assignments (3)	30%
Participation	10% (TUTORIAL ATTENDANCE + PARTICIPATION)
Midterm	30%
Debate	30%

The Midterm (2.5 hours) will occur in class on the FIRST OR SECOND WEEK OF MARCH which is tentative due to the 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.

The details of the debates will be discussed in class.

Textbook:

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

Copyright:

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 copyrighted, 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.

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.utsc.utoronto.ca/~ability/>

We also suggest you also refer to the following University of Toronto Scarborough Library link: <http://utsc.library.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

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 previously found this resource extremely helpful for writing term papers.