Toronto Metropolitan University

Faculty of Science

SCI 223: Weather Phenomena and Climate Change

Sections: 1-4
Classroom Number: KHS 239, Class Time: Wednesday 6-10pm

Instructor Information

- **Instructor Name:** Mo Nakouzi
- **Office Location:** EPH 841
- **Office Hours:** Mondays 5-6pm, Fridays 12-1pm
- **Phone:** (416) 979 – xxxx
- **Course Website:** my.torontomu.ca
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Email Policy

In accordance with the Policy on TMU Student Email Accounts (Policy 157), Toronto Metropolitan University (TMU) requires that any electronic communication by students to TMU faculty or staff be sent from their official university email account.

Course Description

The course is designed to give students a basic understanding of the past, present, and future of Earth's climate and weather systems. Emphasis will be placed on examining the far-reaching implications of climate change, with a specific focus on weather phenomena. Throughout this course, students will investigate earth's climatic history, analyze current climate trends, anticipate future climate scenarios, and focus on climate change consequences.

Weekly Contact: Lecture 4 hrs.

GPA Weight: 1.00

Billing Units: 1

Count: 1.00

Prerequisites: None

Antirequisites: None

Liberal Studies: Lower Liberal

Course Details

Teaching Methods

This course is taught in-person on campus in 4-hour weekly sessions. These sessions will include a combination of short lectures with longer in-class activity-based group learning exercises. An assistant AI, Cloudy, will be used to support the students with navigating the course.

Course Materials

Required text & other materials

- Readings and resources: Students will read selected articles and book chapters and view short videos. All readings and resources will be provided through TMU Library eReserves and/or free online sources.
- Technology requirements: students will need an Internet connection to submit assignments and access course content, and they will need access to word-processing software that can save files as .docx, .doc, or .pdf files. They will need a method of writing assignments in-class, whether an internet-connected device (preferred) or pen and paper. Students who wish to make online office-hours appointments may need access to a microphone (whether a separate peripheral or built-in to a phone, tablet, or laptop). Students may need to sign in to platforms such as Zoom and Google Drive using their TMU email and account credentials. Students who sign in with their personal accounts may not have access to all necessary content.
- Everything can be accessed through the course website (LINK TO IT HERE), from lecture materials to weekly schedule. Our assistant AI can also be accessed through the course website. Submissions still need to be made on D2L.

Course Learning Outcomes

1. To provide a better understanding of real-world issues when it comes to climate change and the weather.
2. To critically evaluate and analyze:
    - The history and trends of climate change
    - Future climate projection with technology and AI
    - The consequences of climate change
3. To develop an insight about weather phenomena, from the naturally occurring ones to the more severe ones that are caused as a consequence of climate change.
4. To present students with more sustainable alternatives and help promote a lifestyle that is environmentally conscious.

Plagiarism Detection

Turnitin

Turnitin.com is a plagiarism prevention and detection service to which TMU subscribes. It is a tool to assist instructors in determining the similarity between students' work and the work of other students who have submitted papers to the site (at any university), internet sources, and a wide range of books, journals and other publications. While it does not contain all possible sources, it gives instructors some assurance that students' work is their own. No decisions are made by the service; it generates an "originality report," which instructors must evaluate to judge if something is plagiarized.

Students agree by taking this course that their written work will be subject to submission for textual similarity review to Turnitin.com. Instructors can opt to have student's papers included in the Turnitin.com database or not. Use of the Turnitin.com service is subject to the terms-of-use agreement posted on the Turnitin.com website. Students who do not want their work submitted to this plagiarism detection service must, by the end of the second week of class, consult with their instructor to make alternate arrangements.

Topics and Course Schedule

Week	Date	Topic	Readings
Week 1	May 13-17	• **Before class**: Read course outline on D2L/course website to know what to expect for the course. • **During class:** Overview of course outline and an intro to meteorology. Form groups of 3-5 students for in-class group exercises starting week 2. • **After class**: Prepare week 2 readings before next class.	• N/A
Week 2	May 20-24	• **Before class**: Prepare week 2 readings before class. • **During class:** An overview of the history of weather and forecasting. In-class group exercise 1. • **After class**: Begin working on assignment 1.	• Reading
Week 3	May 27-31	• **Before class**: Submit assignment 1. • **During class:** A discussion about climate change and its causes. In-class group exercise 2. • **After class**: Begin working on assignment 2 and prepare week 4 readings.	• N/A

Week	Date	Topic	Readings
Week 4	June 3-7	• **Before class**: Complete week 4 readings and submit assignment 2. • **During class:** Understanding weather phenomena and their causes. In-class group exercise 3. • **After class**: Begin working on the assignment 3.	• Reading
Week 5	June 10-14	• **Before class**: Submit assignment 3. • **During class:** Analyzing the consequences of climate change, specifically unusual/extreme weather phenomena. In-class group exercise 4. • **After class**: Begin working on assignment 4 and prepare week 6 readings.	• N/A
Week 6	June 17-21	• **Before class**: Complete week 6 readings and submit assignment 4. • **During class:** Evaluating how we can use technology and AI to predict weather and the phenomena and steps we take to be sustainable. In-class group exercise 5. • **After class**: Work on the final project.	• Reading

Assessment Weighting Breakdown

Evaluation Component	Percentage of Final Grade
In-class Group Exercises	15% (3% each weekly exercise for 5 weeks)
Assignments	50% (12.5% each weekly assignment for 4 weeks)
Final Project	35%
Total:	100%

Evaluation

In-class Group Exercises (15% - 3% each)

A group of 3-5 students will be formed during class on the first week. Every week starting 2nd week, students will be expected to work with their group during class to submit an activity worth 3% of their final grade. These activities will allow students to further understand the topics covered during the lecture and apply the knowledge.

Assignments (50% - 12.5% each)

There will be 4 assignments to be submitted, each worth 12.5% of the final grade. Each assignment will be a 500-word paper that involves the students to do their research about a topic covered in class. The students are expected to apply knowledge from their lectures and group activities and analyze various topics. After students receive a grade, they can request to redo the assignment if they are unhappy with their grade.

Final Project (35%)

The students will write a report to analyze and evaluate a case-study about how technology and AI are used in weather (and phenomena) forecasting. Students are expected to utilize the concepts and materials learned throughout the course.

University Policies

Students must be reminded that they are required to adhere to all relevant university policies found in their online course shell in D2L and/or on the Senate website.

Important Resources Available at Toronto Metropolitan University

- The Library provides research workshops and individual assistance. If the University is open, there is a Research Help desk on the second floor of the library, or students can use the Library's virtual research help service to speak with a librarian.
- Student Life and Learning Support offers group-based and individual help with writing, math, study skills, and transition support, as well as resources and checklists to support students as online learners.
- You can submit an Academic Consideration Request when an extenuating circumstance has occurred that has significantly impacted your ability to fulfill an academic requirement. You may always visit the Senate website and select the blue radio button on the top right hand side entitled: Academic Consideration Request (ACR) to submit this request.

  For Extenuating Circumstances, Policy 167: Academic Consideration allows for a once per semester ACR request without supporting documentation if the absence is less than 3 days in duration and is not for a final exam/final assessment. Absences more than 3 days in duration and those that involve a final exam/final assessment, require documentation. Students must notify their instructor once a request for academic consideration is submitted. See Senate Policy 167: Academic Consideration.
- If taking a remote course, familiarize yourself with the tools you will need to use for remote learning. The Remote Learning Guide for students includes guides to completing quizzes or exams in D2L Brightspace, with or without Respondus LockDown Browser and Monitor, using D2L Brightspace, joining online meetings or lectures, and collaborating with the Google Suite.
- Information on Copyright for Faculty and students.

Accessibility

I am committed to making the course accessible to all students, including those with disabilities. The course does include a live presentation assignment and requires interactions among students during class time, both of which are directly related to the course learning outcomes. In addition, because the course is designated as in-person, students are expected to attend class on campus, and, due to technological and personnel limitations, recordings of in-person classes can't be provided, nor can class content be repeated separately for individuals. However, if you're unable to attend a class or meet the above course requirements, please let me know, and we can discuss how to keep current with the material and/or negotiate grading alternatives where possible.

In general, if you encounter an accessibility barrier with course materials or technologies, please contact me by email and/or in person, in advance of deadlines/the relevant class if possible. I will do my best to accommodate you.

Academic Accommodation Support

Academic Accommodation Support (AAS) is the university's disability services office. AAS works directly with incoming and returning students looking for help with their academic accommodations. AAS works with any student who requires academic accommodation regardless of program or course load.

- Learn more about Academic Accommodation Support.
- Learn how to register with AAS.

Academic Accommodations (for students with disabilities) and Academic Consideration (for students faced with extenuating circumstances that can include short-term health issues) are governed by two different university policies. Learn more about Academic Accommodations versus Academic Consideration and how to access each.

Wellbeing Support

At Toronto Metropolitan University, we recognize that things can come up throughout the term that may interfere with a student's ability to succeed in their coursework. These circumstances are outside of one's control and can have a serious impact on physical and mental well-being. Seeking help can be a challenge, especially in those times of crisis.

If you are experiencing a mental health crisis, please call 911 and go to the nearest hospital emergency room. You can also access these outside resources at anytime:

- **Distress Line:** 24/7 line for if you are in crisis, feeling suicidal or in need of emotional support (phone: 416–408–4357)
- **Good2Talk:** 24/7-hour line for postsecondary students (phone: 1-866-925-5454)
- **Keep.meSAFE:** 24/7 access to confidential support through counsellors via My SSP app or 1-844-451-9700

If non-crisis support is needed, you can access these campus resources:

- **Centre for Student Development and Counselling:** 416-979-5195 or email csdc@torontomu.ca
- **Consent Comes First – Office of Sexual Violence Support and Education:** 416-919-5000 ext 3596 or email osvse@torontomu.ca
- **Medical Centre:** call (416) 979-5070 to book an appointment

We encourage all Toronto Metropolitan University community members to access available resources to ensure support is reachable. You can find more resources available through the Toronto Metropolitan University Mental Health and Wellbeing website.