

EES B03 PRINCIPLES OF CLIMATOLOGY
Department of Physical and Environmental Sciences
University of Toronto at Scarborough

Instructor: Dr. Micah J. Hewer

Email: micah.hewer@utoronto.ca

Office: EV350

Office Hours: Wednesday 11am – 1 pm

Teaching Assistants:

charlotte.wargniez@mail.utoronto.ca

adriano.roberto@mail.utoronto.ca

mattw.day@mail.utoronto.ca

Course Description:

This is an overview of the physical and dynamic nature of meteorology, climatology, and related aspects of oceanography. Major topics include atmospheric composition, nature of atmospheric radiation, atmospheric moisture and cloud development, atmospheric motion including air masses, front formation and upper air circulation, weather forecasting, ocean circulation, climate classification, climate change theory and global warming.

Prerequisite: EESA06H3 or EESA09H3

Exclusions: GGR203H and GGR312H

Lectures:

Wednesdays 10-11 am, SW 319 (Selected Topics on Climate Change)

Wednesdays 1-3 pm, SW 319 (Principles of Climatology)

Course Textbook:

Weather and Climate: An Introduction

Sheila Loudon Ross

Oxford University Press (first edition published in 2013 or second edition published in 2022)

Tentative Lecture Schedules:

Date	Lecture Topic (10-11am)	Textbook Reading
January 11	Course Introduction	
Jan 18	Global Climate	Chapter 16
Jan 25	Earth's Changing Climate	
February 1	Canada's Changing Climate	
Feb 8	Toronto's Changing Climate	
Feb 15	Mid-term Exam Preparation	
Feb 22	READING WEEK	
March 1	MID-TERM EXAM	
Mar 8	Climate Change and Tourism in Canada	
Mar 15	Climate Change and Wine in Canada	
Mar 22	Climate Change and Health in Canada	
Mar 29	Air Masses and Fronts	Chapter 13
April 5	Final Exam Preparation	
Apr 11-12	STUDY BREAK	
Apr 13-27	FINAL EXAM	

Date	Lecture Topic (1-3pm)	Textbook Reading
January 11	Introduction: Atmospheric Science	Chapter 1
Jan 18	Composition of the Atmosphere	Chapter 2
Jan 25	Behaviour of the Atmosphere	Chapter 3
February 1	Energy	Chapter 4
Feb 8	Radiation	Chapter 5
Feb 15	Energy Balance	Chapter 6
Feb 22	READING WEEK	
March 1	MID-TERM EXAM	
Mar 8	Water Vapour	Chapter 7
Mar 15	Condensation	Chapter 9
Mar 22	Precipitation	Chapter 10
Mar 29	Winds	Chapter 11
April 5	General Circulation of the Atmosphere	Chapter 12
Apr 11-12	STUDY BREAK	
Apr 13-27	FINAL EXAM	

Tentative Tutorial Schedule:

Date	Tutorial Topic
January 11	INTRODUCTION: NO TUTORIALS
Jan 18	T1 - Study Notes on Atmospheric Science
Jan 25	T2 - Study Notes on Atmospheric Composition
February 1	T3 - Study Notes on Atmospheric Behaviour
Feb 8	T4 - Study Notes on Energy
Feb 15	T5 - Study Notes on Radiation
Feb 22	READING WEEK: NO TUTORIALS
March 1	MID-TERM EXAM: NO TUTORIALS
Mar 8	T6 - Study Notes on Global Climate
Mar 15	T7 - Study Notes on Water Vapour
Mar 22	T8 - Study Notes on Condensation
Mar 29	T9 - Study Notes on Precipitation
April 5	T10 - Study Notes on Wind
Apr 11-12	STUDY BREAK: NO TUTORIALS
Apr 13-27	FINAL EXAM: NO TUTORIALS

Course Marking Scheme:

Participation: 20%

- Attendance at each of the ten tutorials (10%) and submission of the related study notes (10%).

Assignment: 10%

- Selected Topics on Climate Change assignment due during the last tutorial (April 5).

Midterm Exam: 30%

- In-class exam on March 1, covering lecture material from January 11 to February 15.

Final Exam: 40%

- In-person exam during official exam period, covering lecture material from March 8 to April 5.

Academic Integrity:

Be wary of the fine line between working together and plagiarizing

No electronic devices other than UTSC approved calculators

http://www.utsc.utoronto.ca/~vpdean/academic_integrity.html

Course communication:

Quercus

<https://q.utoronto.ca/>

Academic Resources:

Academic Advising & Career Centre

<http://www.utsc.utoronto.ca/aacc/>

AccessAbility

<http://www.utsc.utoronto.ca/~ability/>

UTSC Library

<https://utsc.library.utoronto.ca>

The Writing Centre

<http://www.utsc.utoronto.ca/twc/welcome>