

The University of Western Ontario
 Department of Geography and Environment
GEOG 2310A: Weather and Climate
 Fall 2022

1. Course Information

Lecture Delivery Mode	Day and Time	Location
In-person	Thursdays 11:30 AM – 1:20 PM	SSC 2028

Lab Delivery Mode	Day and Time	Location
In-person	Mondays 9:30 – 11:20 AM	SSC 1004
	Mondays 3:30 – 5:20 PM	SSC 1004
	Wednesdays 12:30 – 2:20 PM	SSC 1004



Fall Classes Start	Reading Week	Fall Classes End	Study Day	Fall Final Exams
Sep 8	Oct 31 – Nov 6	Dec 8	Dec 9	Dec 10 – Dec 22

Sep 16: Last day to add a first term half course

Oct 10: Thanksgiving Holiday

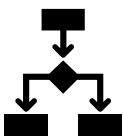
Nov 12: Last day to drop a first term half course without penalty



Course Instructor	Contact Information	Office	Office Hours
Mark Moscicki	mmoscic@uwo.ca	SSC 2219	Thursdays 2:00 – 3:30 PM

2. Calendar Description

Course Description



Fundamentals of the physical processes underlying weather and climate; radiant energy, energy balances, clouds, atmospheric dynamics and thermodynamics; principles of the greenhouse effect, mid-latitude cyclones and aspects of weather forecasting, severe weather phenomena and atmospheric optics.

2 lecture hours, 2 laboratory hours, 0.5 course weight

Prerequisite: 1/0 course from GEOG 1100, 1300A/B, 1400F/G, 1500F/G, 2131A/B, 2132A/B, 2133A/B, 2142A/B, 2152F/G, 2153A/B or 0.5 course from Mathematics, Applied Mathematics, Calculus, Environmental Science or Physics at 1000-1999 level; or enrollment in the Major in Physical Geography or in an Honours Earth Science Program for Professional Registration.

Prerequisite checking is the student's responsibility.

Senate Regulations

Unless you have either the prerequisites for this course or written special permission from your dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites

3. Readings

The MindTap website will be used in this course; this is a comprehensive and interactive site that includes the full electronic version of the textbook listed below.



Ahrens, C., Jackson, P., and Jackson, C. (2016): *Meteorology Today: An Introduction to Weather, Climate, and the Environment* (2nd Cdn Edition), Nelson: Toronto, ON.

4. Learning Objectives

The objectives of this course are to provide students with:

- an understanding of the fundamental basis of weather and climate phenomena
- an appreciation of the impact of weather and climate on our daily lives
- an introduction to numerical based meteorological problem-solving skills
- improved map reading abilities and geographic awareness



5. Course Format

Attendance at lecture and laboratory sessions is expected. Selected course material will be posted to [OWL](#).

[Google Chrome](#) or [Mozilla Firefox](#) are the preferred browsers to optimally use OWL; update your browsers frequently. Students interested in evaluating their internet speed, please click [here](#). Using the proper browser is important, especially when using different features integrated with OWL.



If students need assistance, they can seek support on the [OWL Help page](#). Alternatively, they can contact the [Western Technology Services Helpdesk](#). They are also available by phone at 519-661-3800 or ext. 83800.

6. Communication



Students should check the course website regularly to keep up with announcements. E-mails to the instructor or to a teaching assistant must be sent from a UWO account and should contain the course code in the subject. E-mails will receive a response within 24 hours on weekdays.

7. Evaluation



Students are responsible for material covered in lectures as well as the assigned readings. The midterm exam will cover material studied from Sep 8 through Oct 13. The final exam is cumulative but weighted toward material studied in the second half of the semester. Exams will consist of multiple choice, definition, fill in the blank, short answer, discussion, and weather map analysis questions.

<i>Component</i>	<i>Date</i>	<i>Value</i>
Laboratory Exercises	Weekly	27%
MindTap Activities	Weekly	8%
Midterm Exam	Oct 20	20%
Final Exam	TBA	45%

The evaluation methods above are essential requirements of the course.

Course Grades

Grades will not be adjusted on the basis of need. It is important to monitor your performance in the course. You are responsible for your grades in the course.

Late Assessments

Laboratory exercises submitted late without approved documentation will be subject to a penalty of 10% per day.

8. Lecture Schedule

<i>Lecture</i>	<i>Date</i>	<i>Topic</i>	<i>Reading: Chapter</i>
1	Sep 8	Scales and Symbols	Apx B
		The Atmosphere	1
2	Sep 15	Energy	2
		Air Temperature	3
3	Sep 22	Climatic Controls	3
		Atmospheric Moisture	4
4	Sep 29	Clouds and Fog	5
		Stability	6
5	Oct 6	Tephigrams	6
		Precipitation Development	7
6	Oct 13	Precipitation	7
		Air Pressure	8
	Oct 20	Midterm Exam	
7	Oct 27	Winds	8
		Small Scale Winds	9
8	Nov 10	Global Circulation Patterns	10
		Air Masses and Fronts	11
9	Nov 17	Mid-Latitude Cyclones	12
		<i>Video: Decoding the Weather Machine</i>	
10	Nov 24	Thunderstorms	13
		Tornadoes and Hurricanes	14
11	Dec 1	<i>Video: Rise of the Superstorms</i>	
		Weather Forecasting	15
12	Dec 8	Air Pollution	18
		Atmospheric Optics	19

9. Laboratory Schedule

There are 9 lab exercises; each one will be introduced at the beginning of the lab session and is due one week later. Each exercise is worth 3% of the course grade. Students are encouraged to complete the exercises during the time allotted in the lab classroom.

Lab exercises are not accepted electronically; a completed paper copy of each exercise is required to be submitted.

<i>Exercise</i>	<i>Date (Mon)</i>	<i>Date (Wed)</i>	<i>Topic</i>
1	Sep 12	Sep 14	Station Symbols
2	Sep 19	Sep 21	Radiation Balances
3	Sep 26	Sep 28	Climate Statistics
4	Oct 3	Oct 5	Atmospheric Moisture
5	Oct 17	Oct 19	Tephigrams
6	Oct 24	Oct 26	Climate Data
7	Nov 7	Nov 9	Winds
8	Nov 21	Nov 23	Surface Map Analysis
9	Nov 28	Nov 30	Severe Weather

10. Accommodation Policies

Accessible Education

Students with disabilities work with Accessible Education which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The accommodation policy can be found here: [Academic Accommodation for Students with Disabilities](#).

Academic Consideration for Missed Assessments

Students seeking academic accommodation on medical grounds for missed *laboratory exercises* or missed *MindTap activities* should contact the instructor within 48 hours of the assessment deadline.

The University recognizes that a student's ability to meet their academic responsibilities may, on occasion, be impaired by medical illness. Illness may be acute (short term), chronic (long term), or chronic with acute episodes. The University further recognizes that medical situations are deeply personal and respects the need for privacy and confidentiality in these matters. However, to ensure fairness and consistency for all students, academic accommodation for the *midterm exam* or the *final exam* shall only be

granted in those cases where there is documentation indicating that the student was seriously affected by illness and could not reasonably be expected to meet their academic responsibilities. This documentation must be submitted to an academic counselling office within 48 hours of the assessment deadline.

[Policy on Academic Consideration for Student Absences](#)

[Student Medical Certificate](#)

Religious Accommodation

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the instructor and an academic counsellor if their course requirements will be affected by a religious observance. Additional information is given in the [Western Multicultural Calendar](#).

11. Make-up Examinations

A make-up exam will be granted with approved documentation only. All documentation for missed exams must be provided to an Academic Counselling Office within 48 hours of the originally scheduled exam and students must notify the instructor of the absence within 48 hours of the originally scheduled exam. Otherwise, a grade of zero on the exam will be assigned. The content of make-up exams will differ from the originally scheduled exam.

12. Continuity of Education Plan

In the event of a COVID-19 resurgence during the course that necessitates the University to direct courses move away from face-to-face interaction, all remaining course content will be delivered entirely online asynchronously. The grading scheme will not change. Any remaining assessments will also be conducted online as determined by the course instructor.

13. Information on COVID-19

Mask Guidelines

Students might be expected to wear triple layer, non-medical, paper masks at all times in the classroom as per University policy and public health directives. Students who are unable to wear a mask must seek formal accommodation through Western Accessible Education, and present medical documentation.

Students are not permitted to eat or drink while in class to ensure masks stay in place. Students will be able to eat and drink outside of the classroom during scheduled breaks.

Students unwilling to wear a mask as stipulated by University policy and public health directives will be referred to the Dean, and such actions will be considered a violation of the student Code of Conduct.

Course Absences due to Daily COVID Screening Questionnaire

Missed assessments (e.g., activities, laboratory exercises, exams) require formal academic considerations (see Section 10).

14. Academic Offences

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a [scholastic offence](#).

Computer graded multiple choice exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

15. Use of Electronic Devices

No electronic devices will be permitted during exams.

16. Commitment to Accessibility

The Department of Geography and Environment strives at all times to provide accessibility to all faculty, staff, students and visitors in a way that respects the dignity and independence of people with disabilities. Please contact the instructor if you require material in an alternate format or if you require any other arrangements to make the course more accessible to you. You may also wish to contact Student Accessibility Services (SAS) at 519-661-2147 for any specific question regarding an accommodation. Information regarding [accommodated exams](#) is available. More information about [accessibility](#) is available as well.

17. Mental Health

If you or someone you know is experiencing distress, there are several resources at Western to assist you. Please visit the University's [Health and Wellness](#) site for more information on mental health resources.

18. Support Sites

[Student Support Services](#)
[Student Development Centre](#)

19. Important Dates

Sep 8: Fall classes resume

Sep 16: Last day to add a first term half course

Oct 10: Thanksgiving Holiday

Oct 31 - Nov 6: Fall Reading Week (no classes; department office open)

Nov 12: Last day to drop a first term half course without academic penalty

Nov 30: Last day to drop a full course without academic penalty

Dec 8: Fall classes end

Dec 9: Study day

Dec 10-22: Examination period