

University of Western Ontario
Department of Geography
GEOG 2310A: Weather and Climate
Fall 2012

Instructor:	Mark Moscicki	Lectures:	Tue & Thu 12:30 – 1:20 pm 3M Centre 3250
E-mail:	mmoscic@uwo.ca	Labs:	Tue 2:30 – 4:20 pm Wed 4:30 – 6:20 pm Thu 10:30 am – 12:20 pm All labs are in SSC 2333
Office:	SSC 2223		
Office Hours:	Thu 2:00 – 3:00 pm		

Overview:

The course is an introduction to the study of the atmosphere and its processes. Various aspects of meteorology and climatology are emphasized including the structure and behaviour of the atmosphere, radiant energy, energy balances, clouds, precipitation processes, atmospheric dynamics and thermodynamics, weather systems, severe weather, and global climate change.

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 skills and geographic knowledge

Prerequisites:

1.0 course from Geography 1100, 1300A/B, 1400F/G, 1500F/G or the former Geography 020E; or 0.5 course from Mathematics, Applied Mathematics, Calculus, Environmental Science or Physics at the 1000-1999 level; or enrollment in the Major in Physical Geography or in an Honours Earth Science Program for Professional Registration.

Textbook:

Ahrens, C., Jackson, P., and Jackson, C. (2011): *Meteorology Today: An Introduction to Weather, Climate, and the Environment* (1st Canadian Edition), Nelson: Toronto, Ont.

Schedule:

<i>Lecture</i>	<i>Date</i>	<i>Topic</i>	<i>Reading</i>	
			<i>Chapter</i>	<i>Pages</i>
	Thu Sep 6	Introduction		
1	Tue Sep 11	Scales and Symbols	App	A4-A7
2	Thu Sep 13	The Atmosphere	1	3-19
3	Tue Sep 18	Radiation	2	33-61
4	Thu Sep 20	Air Temperature	3	65-83
5	Tue Sep 25	Climatic Controls	3	83-91
6	Thu Sep 27	Atmospheric Moisture	4	99-121
7	Tue Oct 2	Clouds and Fog	5	125-151
8	Thu Oct 4	Stability	6	165-183
9	Tue Oct 9	Tephigrams	6	184-187
10	Thu Oct 11	Precipitation Development	7	191-211
11	Tue Oct 16	Precipitation	7	211-221
	Thu Oct 18	Midterm Exam		
12	Tue Oct 23	Air Pressure	8	225-243
13	Thu Oct 25	Winds	8	244-253
14	Tue Oct 30	Small Scale Winds	9	257-289
15	Thu Nov 1	Global Circulation Patterns	10	293-314
16	Tue Nov 6	Air Masses and Fronts	11	323-347
17	Thu Nov 8	Mid-Latitude Cyclones	12	351-368
18	Tue Nov 13	Weather Forecasting	13	381-407
19	Thu Nov 15	Thunderstorms	14	415-439
20	Tue Nov 20	Tornadoes	14	439-453
21	Thu Nov 22	Hurricanes	15	457-483
22	Tue Nov 27	Climate Change	16	487-512
23	Thu Nov 29	Air Pollution	18	557-589
24	Tue Dec 4	Atmospheric Optics	19	593-614

Assessment:

<i>Assessment Method</i>	<i>Value</i>
Laboratory Exercises	40%
Midterm Exam	20%
Final Exam	40%

The midterm exam is 50 minutes in length and covers material from Sep 6th through Oct 16th. The final exam is three hours in length and will be scheduled by the registrar's office; it is cumulative thus covering material from the entire course. Exams will consist of multiple choice, fill in the blank, short answer, and discussion questions.

Laboratory Exercises:

There are ten laboratory exercises; each one will be introduced at the beginning of the lab session and is due one week later. Each exercise is worth 4% of your grade. You may work together when completing the assignments but you each must submit your own exercise.

Laboratory Schedule:

<i>Exercise</i>	<i>Date (Tue)</i>	<i>Date (Wed)</i>	<i>Date (Thu)</i>	<i>Topic</i>
1	Sep 11	Sep 12	Sep 13	Station Symbols
2	Sep 18	Sep 19	Sep 20	Radiation Balances
3	Sep 25	Sep 26	Sep 27	Climate Indices
4	Oct 2	Oct 3	Oct 4	Atmospheric Moisture
5	Oct 9	Oct 10	Oct 11	Tephigrams
6	Oct 23	Oct 24	Oct 25	Stability Analysis
7	Oct 30	Oct 31	Nov 1	Climate Data
8	Nov 6	Nov 7	Nov 8	Winds
9	Nov 13	Nov 14	Nov 15	Surface Map Analysis
10	Nov 20	Nov 21	Nov 22	Severe Weather

Additional Statements:

Prerequisites:

Unless you have a proper prerequisite for this course or written special permission from your Dean to enroll in it, you will be removed from the course and it will be deleted from your record. There will be no adjustment to your fees and this decision may not be appealed.

Academic Offences:

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a scholastic offense at this link:
<http://www.uwo.ca/univsec/handbook/appeals/scholoff.pdf>

Accommodation Policy:

Students seeking academic accommodation on medical grounds for missed exams must apply to the Academic Counselling office of their home faculty and provide documentation. Students seeking academic accommodation on medical grounds for missed laboratory exercises must notify the instructor immediately. For the University of Western Ontario policy on accommodation for medical illness and a downloadable Student Medical Certificate, see this link: http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.pdf

Electronic Devices:

No electronic devices other than calculators will be permitted during examinations.

Commitment to Accessibility:

The University of Western Ontario is committed to achieving barrier free accessibility for persons studying, visiting and working at the university. Please contact me 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 Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

Support Services:

Registrarial Services: <http://www3.registrar.uwo.ca/index.cfm>

Student Development Services: <http://www.sdc.uwo.ca/>