



GEOG2331 Climatology Winter 2018

Introduction to Climatology

Instructor: Lisa TUTTY BSc (hon) MSc. ltutty@lakeheadu.ca

Office hours: Wednesdays from noon until 1pm, either in my cubicle on the 3rd floor of the OA building or in OA1002 computer lab. Email me please if you can't find me. None WFeb14.

Lecture: Mondays and Wednesdays 1:30-2:30pm in OA2015, **except** MJan15 and WFeb14.

Lab: Mondays 8:30-10:30am in OA2018. **BEGINS JAN 8TH. No lab on MJan15.**

Course Objectives: This course gives a general introduction to meteorology and climatology. *Meteorology topics include* energy balance in the atmosphere, moisture and cloud development in the atmosphere, atmospheric dynamics, small and large scale circulations, storms and cyclones, and weather forecasting. *Climatology topics include* the interaction between the atmosphere and oceans over long time periods, climate classification, and the potential for climatic change. Students will understand the physics that drive weather systems; examine the features that create climatic patterns at small (micro) and large (macro) scales; and consider the impacts that climate and weather have on human systems, and vice versa.

Required text: Ahrens, Jackson and Jackson, 2015. Meteorology Today, 2nd Canadian Ed.

Marks Breakdown:

25% Midterm test (Monday Fe 12th during LAB time)****see note below*

20% Labs (Weekly **beginning** M Jan 8, *except for* Jan 15, Jan 29, Feb 12)

7% Lab Test (M Mar 26 during lab time)

8% Group Project

40% Final exam****see note below* (Date should be April 13-24)

http://examtime.lakeheadu.ca/ORIL/index_oril.html

*****NOTE:** Our midterm and exam have a special optional 'group' component. You will do the whole test on your own, this individual test is **not** optional. Then, if you wish, you **may** choose to

do the multiple choice section of the test AGAIN with the help of your classmates. Should you do better on the 'group' version, it will count as 25% of your midterm or exam mark and your individual portion will count as the other 75%. Should you choose not to do the 'group' portion, or should you happen to do better on your 'individual' portion, then I won't count the group portion. In other words: you CANNOT lose by doing the group version, it can only benefit your mark. MIDTERM TEST: We will write the individual portion of the midterm test from 8:30am-9:45am. Note: If you are writing with Accessibility Services they will arrange that you can arrive for the group portion of the test at 9:45am. We will write the group portion from 9:45am-10:20am. A similar arrangement will be made for your final exam.

Late penalty for labs/group project is 10% per day, including weekends. Please use the student health certificate for medical absences:

https://www.lakeheadu.ca/sites/default/files/forms/Certificate%20of%20Illness_Incapacity.pdf

A+	90 to 100%	Outstanding understanding of the course concepts including integration of materials and ideas, ability to apply knowledge to situations
A	80 to 89%	
B	70 to 79%	Above average to excellent knowledge, ability to apply knowledge to situations
C	60 to 69%	Satisfactory knowledge including ability to recognise and apply major course concepts, and to progress to next level of course
D	50 to 59%	Some grasp of course concepts; will likely encounter difficulty with higher levels
E	40 to 49%	Failed to meet minimum requirements of the course
F	1 to 39%	Failure
F	0	Failure resulting from academic dishonesty

Mark descriptions from Lakehead University. Students are advised to refer to the University Calendar to ensure that they have adequate grades and/or average to proceed in their program. Grades in this course are numerical (not letters).

Accommodations: Lakehead University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) and register as early as possible. For more information, please visit: <http://studentaccessibility.lakeheadu.ca>

Academic integrity – Code of student behaviour and disciplinary procedures.

<https://www.lakeheadu.ca/faculty-and-staff/policies/student-related/code-of-student-behaviour-and-disciplinary-procedures>

Academic Integrity:

Academic integrity is fundamental to learning and scholarship at Lakehead University. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures

that the degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves. The University takes a most serious view of offences against academic honesty such as plagiarism, cheating and impersonation. Penalties for dealing with such offences will be strictly enforced.

The "Code of Student Behaviour and Disciplinary Procedures" including sections on plagiarism and other forms of misconduct may be found on the Lakehead University Senate website. See the Code under "Policies - Student Related" in the University Policies at policies.lakeheadu.ca.

Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Copying material word-for-word from a source (including lecture and study group notes) and not placing the words within quotation marks.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Including references to sources that you did not use.
- Obtaining or providing unauthorized assistance on any assignment including:
- Working in groups on assignments that are supposed to be individual work;
- Having someone rewrite or add material to your work while "editing".
- Lending your work to a classmate who submits it as his/her own without your permission.

On tests and exams:

- Using or possessing any unauthorized aid, including a cell phone.
- Looking at someone else's answers
- Letting someone else look at your answers.
- Misrepresenting your identity.
- Submitting an altered test for re-grading.

Misrepresentation:

- Falsifying or altering any documentation required by the University, including doctor's notes.

- Falsifying institutional documents or grades.

The following rules shall govern the treatment of candidates who have been found guilty of attempting to obtain academic credit dishonestly.

(a) The minimum penalty for a candidate found guilty of plagiarism, or of cheating on any part of a course will be a zero for the work concerned.

(b) A candidate found guilty of cheating on a formal examination or a test, or of serious or repeated plagiarism, or of unofficially obtaining a copy of an examination paper before the examination is scheduled to be written, will receive zero for the course and may be expelled from the University.

Neat 15 minute exercise from Cardiff University (Avoiding plagiarism):

<https://ilrb.cf.ac.uk/plagiarism/tutorial/>

* Schedule is subject to changes.

Date	Lecture & Reading	Lab
M Jan 8	AIR: 1. INTRODUCTION. Ch1.	Lab1
W Jan 10	2. THE ATMOSPHERE. Ch1.	
M Jan 15	No lab or class on Monday Jan 15 (I am at specialist appointment, sorry)	
W Jan 17	3. RADIATION AND ENERGY. Ch2.	Lab2
M Jan 22	4. GLOBAL ENERGY BALANCE. Ch2.	
W Jan 24	5. TEMPERATURE & TIME. Ch2&3.	
M Jan 29	6. TEMPERATURE & GEOGRAPHY. Ch3. (This lecture will be available online only, no lab today)	
W Jan 31	7. PRESSURE GRADIENTS. Ch8.	Lab3
M Feb 5	8. FORCES & WINDS. Ch8.	
W Feb 7	WATER IN ATMO: 9. MOISTURE IN THE ATMOSPHERE. Ch4.	
M Feb 12	10. ATMOSPHERIC STABILITY. Ch6.	MIDTERM TEST M Feb 12. 8:30-9:45am individual, 9:45-10:20am group
W Feb 14	No class on Wednesday Feb 14 (I am at specialist appointment again, sorry)	
M Feb 19	<i>Reading Week</i>	
W Feb 21		
M Feb 26	11. CLOUD FORMATION. Ch5&6.	Lab4
W Feb 28	12. PRECIPITATION. Ch7.	
M Mar 5	DISTRIBUTION AND CIRCULATION: 13. ATMOSPHERIC CIRCULATIONS. Ch9.	Lab5
W Mar 7	14. GLOBAL CIRCULATION. Ch10.	
<i>March 9 is drop date</i>		
M Mar 12	15. AIR MASSES & FRONTS. Ch11.	Lab6A
W Mar 14	DISTURBANCES AND SEVERE WEATHER: 16. MIDLATITUDE CYCLONES. Ch12.	
M Mar 19	17. THUNDERSTORMS & TORNADOES. Ch13.	Lab6B
W Mar 21	18. HURRICANES. Ch14.	
M Mar 26	19. HURRICANE FORECASTS & POLAR LOWS. Ch14&15.	LAB TEST (all individual)
W Mar 28	CLIMATE & CLIMATE VARIABILITY: 20. CLIMATE CLASSIFICATION. Ch17.	
M Apr 2	<i>Easter Monday – University closed</i>	
W Apr 4	21. EARTH'S CHANGING CLIMATE. Ch16.	No lab
Tuesday April 10	22. GLOBAL CLIMATE. Ch16. Note: this is “Makeup Monday” for Easter Monday	
<i>Apr 13-24 Exam period. Exam covers POST-midterm material, i.e. it is NOT cumulative.</i>		