

GEOG/ENST 2331 Climatology Fall 2019

Course Outline

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Lab Instructor: **Jason Freeburn** Office: RC 2004 jtfreebu@lakeheadu.ca

Course Objectives:

This course gives a general introduction to meteorology and climatology. Meteorology topics include energy balance, moisture and cloud development in the atmosphere, atmospheric dynamics, small and large scale circulation, 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 are expected review assigned reading, slides and labs before attending on dates listed below.

Text: Ahrens, Jackson and Jackson, 2016. *Meteorology Today 2nd Canadian Edition* (Nelson Education).

Manual: Cornwell, Freeburn, Saunders 2019. *Climatology Manual*.

Lecture Times and Place: Tuesday and Thursday: 11:30 – 12:30 (AT 2020)

Lab Times and Place: Tuesday: 8:30 – 10:30 am or Thursday: 5:30 – 7:30 pm (RC 2003)

Evaluation Scheme and Schedule:

Lab 0	Sept 10/12	0
Lab 1	Sept 17/19	5
Lab 2	Sept 24/26	5
Lab 3	Oct. 1/3	5
Lab 4	Oct. 8/10	5
Midterm	Oct. 10	20
Lab 5 – Lab Quiz	Oct. 22/24	7

Lab 6 “Group Project*"	Nov. 5/7 and 12/14 In AT 3009	8
Lab 7– Virtual camping	Oct 19/21	5
Final Examination	TBA	40

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Lecture Schedule (*subject to revisions*):

Dates	Tuesday	Thursday
Sept 5		Introduction Chapters 0 & 1
Sept 10 & 12	The Atmosphere Chapters 0 & 1 Lab 0	Radiation and Energy Chapter 2 Lab 0
Sept 17 & 19	Global Energy Balance Chapter 2 Lab 1	Temperature Chapters 2 & 3 Lab 1
Sept 24 & 26	Pressure Gradients Chapter 8 Lab 2	Forces and Winds Chapter 8 Lab 2
Oct 1 & 3	Moisture in the Atmosphere Chapter 4 & 5 Lab 3	Atmospheric Stability Chapter 6 Lab 3
Oct 8 & 10	Cloud Formation Chapters 5 & 6 Lab 4	MIDTERM Lab 4
Oct 15 & 17	Reading Week	
Oct 22 & 24	Precipitation Chapter 7	Atmospheric Circulation Chapter 8

Oct 29 & 31	Global Circulation Chapter 10 Lab 5	Air Masses and Fronts Chapter 11 Lab 5
Nov 5 & 7	Midlatitude Cyclones Chapter 12 Lab 6 Group Project	Thunderstorms and Tornadoes Chapter 13 Lab 6 Group Project
Nov 12 & 14	Hurricanes Chapter 14 Lab 6 Group Project (Cont)	Hurricane Forecasts and Polar Lows Chapters 15 & 12 Lab 6 Group Project (Cont)
Nov 19 & 21	Climate Classification Chapter 16 Lab 7 Virtual camping: Slate Islands	Global Climatic Change Chapter 17 Lab 7 Virtual camping: Slate Islands
Nov 26 & 28	Characteristics of Global Warming Chapter 17	Review

Final Exam: Date TBA