

## GEOG/ENST 2331 Climatology Winter 2021 Course Outline

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**Lab Instructor:** Jason Freeburn [jtfreebu@lakeheadu.ca](mailto: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 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 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 2021. *Climatology Manual*.

**Lecture Times and Place:** Monday and Wednesday: 7 – 8 pm (Online)

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

### **Evaluation Scheme and Schedule:**

<b>Lab 0</b>	Jan	0
<b>Lab 1</b>	Jan	5
<b>Lab 2</b>	Feb	5
<b>Lab 3</b>	Feb	5
<b>Lab 4</b>	Feb	5
<b>Midterm</b>	Feb	20
<b>Lab 5 – Lab Quiz</b>	Mar	7
<b>Lab 6 “Group Project*"</b>	Mar	8

Lab 7 – Virtual	Mar.	5
Final Examination	TBA (20 + 20)	40

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**(continued)**

**Lecture Schedule (*subject to revisions*):**

<b>Dates</b>	<b>Monday</b>	<b>Wednesday</b>
<b>Jan 11 &amp; 13</b>	Introduction	Introduction Chapters 0 & 1
<b>Jan 18 &amp; 20</b>	Radiation and Energy Chapter 2	Global Energy Balance Chapter 2
<b>Jan 25 &amp; 27</b>	Temperature Chapters 2 & 3	Pressure Gradients Chapter 8 and Lab 2
<b>Feb 1 &amp; 3</b>	Forces and Winds Chapter 8	Moisture in the Atmosphere Chapter 4 & 5
<b>Feb 8 &amp; 10</b>	Atmospheric Stability Chapter 6	Cloud Formation Chapters 5 & 6
<b>Feb 15 &amp; 17</b>	Precipitation Chapter 7	Review for midterm
<b>Feb 21 &amp; 23</b>	MIDTERM	Atmospheric Circulation Chapter 8
<b>Mar 1 &amp; 3</b>	Global Circulations Chapter 10	Air Masses and Fronts Chapter 11
<b>Mar 8 &amp; 10</b>	Midlatitude Cyclones Chapter 12	Thunderstorms and Tornadoes Chapter 13

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<b>Mar 15 &amp; 17</b>	Hurricanes Chapter 14	Hurricane Forecasts and Polar Lows Chapters 15 & 12
<b>Mar 22 &amp; 24</b>	Climate Classification Chapter 16	Global Climatic Change Chapter 17
<b>Mar 29 &amp; 31</b>	Characteristics of Global Warming Chapter 17	Review

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