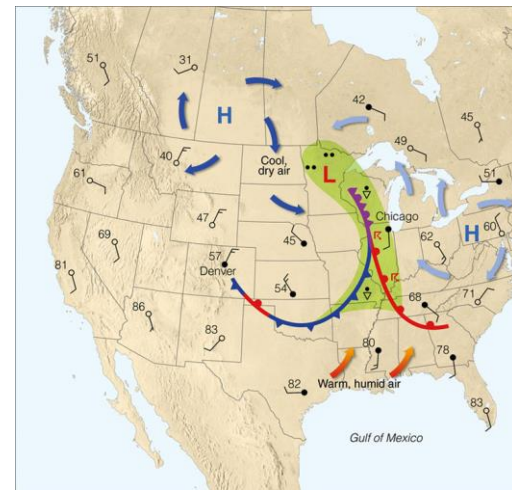


GEOG-2210(3)-001

Meteorology

Winter, 2022

January 6th to April 5th 2022



INSTRUCTOR:

Dr. Jacqueline Binyamin

Office: 5L10

Phone: 204 786-9982

E-mail: j.binyamin@uwinnipeg.ca

Office Hours (Zoom): Tuesday and Thursday (16:00 – 17:00) or by appointment

LECTURES:

Tuesday and Thursday 11:30 – 12:45,

Online-Synchronous

TEXTBOOK (recommended): Meteorology Today: An Introduction to Weather, Climate, and the Environment (13th edition)

by C. Donald Ahrens and Robert Henson (2022)

Student Edition: ISBN-13: 9780357452073

LAB

Zoom Meetings: Wednesday, 12:30-14:20,

All classes will be conducted online using a combination of **Nexus** Communication Tools and **Zoom**. Students should be available during the posted lecture and lab time for live streaming and/or discussions. Lectures and other course materials will be posted on Nexus.

A recurring zoom link will be sent at the beginning of the course to all students registered for the course. The same link can be used for all lectures, labs and office hours. While it is not necessary to keep video on during lectures, however, students are required to do so during tests and exams.

Students are required to attend zoom classes on time and keep their microphones on mute unless they have a question or comment or are participating in a discussion. If you have a question, you can use the 'raise hand' feature or use the chat option in zoom to ask the question and the instructor will call on you when ready. **Live lectures will not be saved as video files.** These tools will also be reviewed on the first day of class.

COURSE NEXUS:

Use your WebAdvisor User ID and Password.

Login in at <https://nexus.uwinnipeg.ca>

If you are having difficulties with Nexus contact the help desk at 204-786-9149 or servicedesk@uwinnipeg.ca

Please use your University of Winnipeg email address for course related correspondence: name@webmail.uwinnipeg.ca. Students have a responsibility to regularly check their **Nexus e-mail addresses** to ensure timely receipt of correspondence from their course instructor. Emails from others accounts such as Hotmail or Gmail are frequently treated as spam and thus may not reach the recipient.

Office hours are scheduled in **Tuesday and Thursday 16:00 – 17:00**. If these hours are inconvenient, appointment can be arranged. If you have no other alternative but to leave an e-mail, the instructor cannot guarantee an immediate response to your e-mail or phone message.

Please visit the University of Winnipeg's Weather Station webpage at:
weatherstation.uwinnipeg.ca

COURSE DESCRIPTION:

This course surveys the causes and characteristics of weather. Fundamental thermodynamic and hydrodynamic principles of atmospheric physics will be reviewed. Common and severe/unusual weather phenomena will be explained, as will be the processes involved in the preparation of weather forecasts.

COURSE OBJECTIVES:

The objective of this course is for students: (1) to gain an appreciation of the thermodynamic and dynamic mechanisms that are responsible for the atmospheric conditions that occur at various times and locations (i.e., the weather), (2) to understand some of the methods of measuring and analyzing weather data, as well as some of the ways in which the atmosphere interacts with the hydrosphere, lithosphere, and the biosphere, and (3) to introduce the methodologies employed in broad-scale weather forecasting, and in the prediction of localized severe convective storms. Students should acquire a better understanding of the weather of the Canadian Prairies.

LABORATORIES:

The labs in Meteorology are considered integral parts of the course and will be presented as such. Therefore, it is the responsibility of the student to attend all scheduled labs and to complete the assignments as required. Information on laboratory procedures will be discussed during the first lab session.

It is imperative that all students attend their scheduled lab sections regularly. Labs in this course begin the week of **January 10**. Labs are conducted via **Zoom**.

GRADING PROCEDURE:

Lab Assignments 25%, Due dates: as specified on each assignment.

Midterm Theory Test 40% (2 Tests at 20% each)

Final Theory and Lab Exam (combined) 35%

Total 100%

Final grades will be assigned on the basis of accumulated scores from the above components.

Letter grades are typically determined using the following numeric groupings as guidelines:

%	90-100	84-89	80-83	75-79	70-74	65-69	55-64	50-54	<50
Grade	A+	A	A-	B+	B	C+	C	D	F

NOTE: *The numeric boundaries separating letter grades may be adjusted at the request of the Departmental Review Committee.* Grades are not final until approved by the University Senate.

The **Final Theory and Lab Exam** must be written as scheduled in the 2021-2022 Fall/Winter Exam Schedule; alternate dates will not be considered. If you have a final Theory Exam conflict (i.e., two final exams on the same date and time), or if exceptional circumstances prevent you from writing the exam as scheduled, you must contact Academic Advising immediately, otherwise, you must write the final exam as scheduled. Please refer to section 9d, of Regulation and Policies in the 2021-2022 Undergraduate Academic Calendar link: (<http://www.uwinnipeg.ca/index/calendar-calendar>).

Test/Exam Policy

Exams will be given **online**, via **Zoom and Nexus**. All exams are “**closed-book**” exams proctored through **Zoom with your webcam on**. The students are **not allowed** to search on their notes, internet or other reference material while taking the exam. Use of a simple calculator or dictionary is allowed but no other electronic devices are permitted. If you miss a test or exam, you must contact your instructor immediately. Proof of illness or exceptional circumstances is required before alternate arrangements can be made. Vacation travel is not an acceptable reason.

IMPORTANT DATES:

Thursday, January 6	Lectures begin for the 2022 Winter Term.
Wednesday, January 12	First day of Meteorology Lab.
Thursday, February 10 at 11:30	Midterm Theory Test #1.
February 20-26	Reading Week- No lectures or Labs.
Monday, February 21	Louis Riel Day - University closed.
Sunday, March 13	Daylight Saving Time begins – turn your clock 1 hour ahead.
Wednesday, March 16	Final date to withdraw without academic penalty.
	Please note that withdrawing before the VW date does not result in a fee refund.
Thursday, March 17 at 11:30	Midterm Theory Test #2.
Sunday, March 20	Vernal Equinox at 10:33 am CDT (Sunday, March 20 at 03:33 pm UTC/GMT).
Tuesday, April 5	Last lecture in this course.
Friday, April 15	Good Friday, University closed.
Final Theory and Lab Exam (Date TBA)	Please check http://www.uwinnipeg.ca/exam-schedules/ for final exam schedule

PENALTIES (For Late Submission of Lab Assignments):

Lab assignments will be accepted until five days after the submission date with 5% of the total mark of the assignment being deducted each day from the mark achieved (weekends and holidays are considered as normal days). Work submitted 6 days late or more shall not be accepted.

Course Subjects and Readings:

The following table outlines the topics to be covered during the lectures. The order of presentation is subject to change as circumstances dictate and all the topics listed may not be covered. Any changes will be announced in class.

Topics	Readings from the Textbook
Introduction to Meteorology	
The Earth and Its Atmosphere: Composition and Vertical Temperature Structure, Heating/Cooling	Ch. 1, 2
Thermodynamic State of Air (Temperature, Pressure and Density)	
Ideal Gas Law, Hydrostatic Equilibrium, Hypsometric Equation	
The Atmosphere of Other Planets	
Energy: Warming the Earth and The Atmosphere	
Global Radiation Budget	Ch. 2, 3
Seasonal and Daily Temperature Variations	
Atmospheric Humidity Indices	
Condensation	Ch. 4, 5, 6
Atmospheric Stability and Cloud Development	
Thermodynamic Charts- Tephigrams	
Precipitation and Snowfall	Ch. 7
Air Pressure, Forces and Winds	Ch. 8
Winds: Small Scale and Local Systems	Ch. 9, 10
Winds: Global Scale	
Air Masses, Fronts and Mid-Latitude Cyclones	Ch.11, 12
Weather Forecasting	Ch.13
Severe Storms: Thunderstorms, Tornadoes and Hurricanes	Ch. 14, 15
Exam Review (Theory and Lab exam)	

Voluntary Withdrawal

Please note the deadline date for voluntary withdrawal from this course is **Wednesday, March 16, 2022**. You must formally withdrawal from a course. If you simply stop going to classes, you may receive an "F" on your transcript and loss of tuition credit. Students are encouraged to see the instructor before withdrawal to discuss matters pertaining to the grades.

ACADEMIC REGULATIONS AND POLICIES

1. Students can find answers to frequently asked questions related to remote learning here: <https://www.uwinnipeg.ca/covid-19/remote-learning-faq.html>.
2. When it is necessary to cancel a class due to exceptional circumstances, every effort will be made to inform students via UWinnipeg email and in **Nexus**.
3. Students have the responsibility to regularly check their UWinnipeg e-mail addresses to ensure timely receipt of correspondence from the University and/or their course instructors.
4. The first day of class is Thursday January 6, 2022. Last class will be held on Wednesday April 6, 2022. Evaluation period is Friday, April 8 to Friday, April 22, 2022.
5. The dates the University is closed for holidays, irrespective of campus closure related to COVID-19: Winter mid-term Reading Week February 20-26, February 21 (Louis Riel Day) and April 15 (Good Friday).
6. **Regulations, Policies, and Academic Integrity.** Students are encouraged to familiarize themselves with the “Regulations and Policies” found in the University *Academic Calendar* at: <https://uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf>. Particular attention should be given to subsections 8 (“Student Discipline”), 9 (“Senate Appeals”), and 10 (“Grade Appeals”). Please emphasize the importance of maintaining academic integrity, and to the potential consequences of engaging in plagiarism, cheating, and other forms of academic misconduct. Even “unintentional” plagiarism, as described in the UW Library video tutorial “Avoiding Plagiarism” (<https://www.youtube.com/watch?v=UvFdxRU9a8g>) is a form of academic misconduct. Similarly, uploading essays and other assignments to essay vendor or trader sites (filesharing sites that are known providers of essays for use by others who submit them to instructors as their own work) is a form of misconduct, as it involves “aiding and abetting” plagiarism. More detailed information can be found here:

Academic Misconduct Policy and Procedures:

<https://www.uwinnipeg.ca/institutional-analysis/docs/policies/academic-misconduct-policy.pdf> and <https://www.uwinnipeg.ca/institutional-analysis/docs/policies/academic-misconduct-procedures.pdf>.

7. **Respectful Learning Environment.** Students are expected to conduct themselves in a respectful manner on campus and in the learning environment irrespective of platform being used. Behaviour, communication, or acts that are inconsistent with a number of UW policies (e.g. *Respectful Working and Learning Environment Policy* <https://www.uwinnipeg.ca/respect/respect-policy.html>, *Acceptable Use of Information Technology Policy* <https://www.uwinnipeg.ca/institutional-analysis/docs/policies/acceptable-use-of-information-technology-policy.pdf>) could be considered “non-academic” misconduct. More detailed information can be found here:

Non-Academic Misconduct Policy and Procedures:

<https://www.uwinnipeg.ca/institutional-analysis/docs/student-non-academic-misconduct->

[policy.pdf](#) and <https://www.uwinnipeg.ca/institutional-analysis/docs/student-non-academic-misconduct-procedures.pdf>.

Forms of Academic Misconduct:

- Plagiarism: includes presenting other people's published or unpublished work in part or as a whole as your own. This includes material from lab manuals, essays, journal articles, books, etc. Plagiarism also refers to submitting the same work in more than one course without both instructors' permission and to the situation where two or more students submit identical (or nearly identical) work for evaluation when the work was to be completed individually.
- Cheating: includes copying another person's answer on a test, communicating with another person during a test or exam, consulting unauthorized sources (including written and electronic sources), obtaining a copy (of all or part) of a test/exam/assignment before it is officially available, purchasing tests, essays or other assignments and submitting the work as your own.
- Improper Academic/Research practices include: fabricating or falsifying results, using other peoples' research findings without permission, misrepresenting research results or methods, referring to non-existent sources or investigators, contravening the University's Policy and Procedures on Research Integrity.
- Obstructing academic activities of another person; for example, interfering with another person's access to pertinent resources or information to gain academic advantage.
- Impersonation: both impersonation of another individual or allowing someone to impersonate you.
- Falsification or Modification of an Academic Record: including tests, transcripts, letters of permission, etc.
- Aiding and Abetting Academic Misconduct.
- See online <http://uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf>

Penalties for Academic Misconduct:

Penalties for academic misconduct include, but are not limited to:

- Written warning
- Lower or failing grade on an assignment or test
- Lower or failing grade in a course
- Denial of admission or readmission to the University
- Forfeiture of University awards or financial assistance
- Suspension from the University for a specified period of time
- Withholding or rescinding a U of W degree, certificate or diploma
- Expulsion from the University

Procedures for Academic Misconduct:

All allegations of academic misconduct must be reported initiating a process which involves several steps. These include procedures involving the instructor of the course in which the misconduct is alleged to have occurred, the Departmental Review Committee, and the Senate Academic Misconduct Committee. Students facing a charge of academic or non-academic misconduct may choose to contact the UWSA Student Advocacy Centre where Student advocates will be available to answer any questions about the process, help with

building a case and ensuring students have access to representation. For more information or to schedule an appointment, contact us at [yps@theuwsa.ca](mailto:ypsa@theuwsa.ca) or 204-786-9780.

- 8. Copyright and Intellectual Property.** Course materials are the property of the instructor who developed them. Examples of such materials are course outlines, assignment descriptions, lecture notes, test questions, and presentation slides—irrespective of format. Students who upload these materials to filesharing sites, or in any other way share these materials with others outside the class without prior permission of the instructor/presenter, are in violation of copyright law and University policy. Students must also seek prior permission of the instructor/presenter before, for example, photographing, recording, or taking screenshots of slides, presentations, lectures, and notes on the board. Students found to be in violation of an instructor’s intellectual property rights could face serious consequences pursuant to the *Academic Misconduct* or *Non-Academic Misconduct Policy*.

Misuse of Filesharing Sites. Uploading essays and other assignments to essay vendor or trader sites (filesharing sites that are known providers of essays for use by others who submit them to instructors as their own work) involves “aiding and abetting” plagiarism. Students who do this can be charged with Academic Misconduct.

Avoiding Copyright Violation. Course materials are owned by the instructor who developed them. Examples of such materials are course outlines, assignment descriptions, lecture notes, test questions, and presentation slides. Students who upload these materials to filesharing sites, or in any other way share these materials with others outside the class without prior permission of the instructor/presenter, are in violation of copyright law and University policy. Students must also seek prior permission of the instructor /presenter before photographing or recording slides, presentations, lectures, and notes on the board.

- 9. Research Ethics.** Students conducting research interviews, focus groups, surveys, or any other method of collecting data from any person, including a family member, must obtain research ethics approval before commencing data collection. Exceptions are research activities done in class as a learning exercise. For submission requirements and deadlines, see <http://www.uwinnipeg.ca/research/human-ethics.html>

- 10. Privacy.** Students should be reminded of their rights in relation to the collecting of personal data by the University (<https://www.uwinnipeg.ca/privacy/admissions-privacy-notice.html>), especially if Zoom is being used for remote teaching (<https://www.uwinnipeg.ca/privacy/zoom-privacy-notice.html>) and testing/proctoring (<https://www.uwinnipeg.ca/privacy/zoom-test-and-exam-proctoring.html>).

11. Writing Exams on Holy Days

Students may choose not to attend classes or write examinations on holy days of their religion, but they must notify their instructors at least two weeks in advance. Instructors will then provide opportunity for students to make up work or examinations without penalty. A list of religious holidays can be found in the 2021-22 Undergraduate Academic Calendar.

12. Accessibility Services:

Students with documented disabilities, temporary or chronic medical conditions, requiring academic accommodations for tests/exams or during lectures/laboratories are encouraged to contact Accessibility Services (AS) at 204.786.9771 or

<https://www.uwinnipeg.ca/accessibility-services/> to discuss appropriate options. All information about a student's disability or medical condition remains confidential.

13. Indigenous Student Services

Indigenous students seeking additional supports, academic or other, are encouraged to contact the Aboriginal Student Services Centre (ASSC). The ASSC offers a variety of support services, and was created to maintain a safe, educational and culturally sensitive environment for all Aboriginal students (First Nation, Metis and Inuit) as they pursue their academic studies at The University of Winnipeg. More information can be found at: <http://www.uwinnipeg.ca/assc/>.