

**University of Winnipeg
Department of Geography
GEOG 3210 (3)-001
Hydrology
Fall 2023**



Instructor: Dr. Nora Casson
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Office Hours: Wednesday 12:30 – 2:30 or by appointment
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Lectures: Wednesday

2:30 – 5:15 PM

4CM13

Lab: Thursday

3:30 – 5:20 PM

5L15

Course Description

This course examines all major components (precipitation, evaporation, streamflow, groundwater) of the hydrologic cycle with the most attention being given to surface hydrology. The emphasis throughout the course will be placed upon the methods by which each component may be measured or estimated.

Additional topics to be covered include the causes and consequences of floods, flood frequency, analysis, estimation of peak streamflows, snow hydrology, sediment transport, water balance methods, and urban hydrology.

Prerequisites

GEOG-1203

Course Objectives

To provide the students with:

- an understanding of key concepts and theoretical approaches in hydrology as they apply to the surface and near-surface environments
- an understanding of the controls on the storage, movement and properties of water in these environments.
- an understanding of some of the environmental consequences associated with the alteration of hydrological processes and properties
- a familiarity with some of the basic approaches used to model water fluxes in the surface and near-surface environments

Important Dates

Date	Significance
Wednesday, September 6	First Lecture
October 8 – 14	Reading Break
Monday, October 9	Thanksgiving (University closed)
Saturday, November 11	Remembrance Day (University closed)
Monday, November 13	FINAL DATE to withdraw without academic penalty from courses which begin in September and end in December of the 2023 Fall Term. Please note that withdrawing before this date does not necessarily result in a fee refund.
Wednesday, November 29	Last Class
December 7 – 20	Final Exam Period

Course Assessment

Assessment	Percentage
Lab Assignments	30%
Weekly Quizzes	20%
Mid-term assessment	25%
Final assessment	25%
	100%

Lab Assignments: Six assignments, each worth 5% will be given throughout the semester, and will reflect the work done during the lab period. Due dates for each assignment will be given in class.

Weekly Quizzes: Weekly quizzes will be administered through Nexus

Mid-term and final assessments: Both the mid-term and final assessments will be take-home exams where you will be permitted to use all your notes and any other resources that you may find helpful. You will be given the time frame for the assessments in class.

The following numeric percentages will be used as guidelines when assigning letter grades:

Percent	0-49%	50-59%	60-64%	65-69%	70-74%	75-79%	80-84%	85-89%	90-100%
Letter Grade	F	D	C	C+	B	B+	A-	A	A+

After inspecting the grades, the Departmental Review Committee will forward them to the University's Senate for approval. Please note that while there is a high probability that the percentages specified above will be used, it is possible that the distribution of class marks will cause the Departmental Review Committee or the Senate to require adjustments.

Required Text

Davie, T. (2008) Fundamentals of hydrology, Second edition.

Course Topics and Readings

Additional course materials are available through NEXUS. *This course is NEXUS-enhanced. All information posted on NEXUS site is required reading.*

The following course organization outlines the topics to be discussed during lectures. The order and dates of the presentations are subject to change as circumstances dictate. We may also not be able to cover the entire curriculum due to the interest of the class in examining in more detail some of the topics.

Week	Date	Lecture Topic	Assessments
1	Sept 6	Course introduction The water balance	Quiz #1
2	Sept 13	Atmospheric water	Quiz #2
3	Sept 20	Precipitation	Quiz #3
4	Sept 27	Evaporation	Quiz #4
5	Oct 4	Modelling evaporation	Quiz #5
	Oct 8 – 14	READING WEEK – NO CLASS	
6	Oct 18	Soil water storage and movement	Midterm assessment
7	Oct 25	Groundwater	Quiz #6
8	Nov 1	Infiltration	Quiz #7
9	Nov 8	Runoff	Quiz #8
10	Nov 15	Measurement of flow	Quiz #9
11	Nov 22	Snow hydrology Stream hydrographs	Quiz #10
12	Nov 29	Floods Water quality	Final assessment

1. **Late Work.** Unless prior arrangements have been made, assignments handed in late (after the specified time/date) will incur a penalty of 10% off per day of the earned grade and will not be accepted after 5 days have passed from the due date.
2. 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 examinations without penalty. A list of religious holidays can be found in the 2023-24 Undergraduate Academic Calendar.
3. A permitted or necessary change in mode of delivery may require adjustments to important aspects of course outlines, like class schedule and the number, nature, and weighting of assignments and/or exams.
4. Students can find answers to updates and frequently asked questions related to COVID-19 here: <https://www.uwinnipeg.ca/covid-19/index.html>
5. When it is necessary to cancel a class due to exceptional circumstances, every effort will be made to inform students via University of Winnipeg email
6. Students have the responsibility to regularly check their University of Winnipeg e-mail addresses to ensure timely receipt of correspondence from the University and/or their course instructors.
7. Please note that withdrawing before the VW date does not necessarily result in a fee refund.
8. **Regulations, Policies, and Academic Integrity.** Students are encouraged to familiarize themselves with the Regulations and Policies found in the University Academic Calendar at <https://www.uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf>. Particular attention should be given to subsections 8 (Student Discipline), 9 (Senate Appeals), and 10 (Grade Appeals). Even unintentional plagiarism 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. An updated and expanded U of Winnipeg library site outlining principles of Academic Integrity can be found at <https://library.uwinnipeg.ca/use-the-library/help-with-research/academic-integrity.html>.
9. Important information is outlined in the Academic Misconduct Policy and Procedures: <https://www.uwinnipeg.ca/institutional-analysis/docs/policies/academic-misconduct-policy.pdf> and <https://pace.uwinnipegcourses.ca/sites/default/files/pdfs/publications/Academic%20Misconduct%20Procedures.pdf>
10. **Academic Integrity and AI Text-generating Tools** Students must follow principles of academic integrity (e.g., honesty, respect, fairness, and responsibility) in their use of material obtained through AI text-generating tools (e.g., ChatGPT, Bing, Notion AI). If an instructor prohibits the use of AI tools in a course, students may face an allegation of academic misconduct if using them to do assignments. If AI tools are permitted, students must cite them. According to the MLA (<https://style.mla.org/citing-generative-ai/>), “you should a) cite a generative AI tool whenever you paraphrase, quote, or incorporate into your own work any content (whether text, image, data, or other) that was created by it; b) acknowledge all functional uses of the tool (like editing your prose or translating words) in a note, your text, or another suitable location; and c) take care to vet the secondary sources it cites” If students aren’t sure whether or not they can use AI tools, they should ask their professors.
11. **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 could be considered non-academic misconduct. See the Respectful Working and Learning Environment Policy (<https://www.uwinnipeg.ca/respect/respect-policy.html>) and Acceptable Use of Information Technology Policy (<https://www.uwinnipeg.ca/institutional-analysis/docs/policies/acceptable-use-of-information-technology-policy.pdf>). More detailed information is outlined in the Non-Academic Misconduct

Policy and Procedure: <https://www.uwinnipeg.ca/institutionalanalysis/docs/policies/student-non-academic-misconduct-policy.pdf> and <https://www.uwinnipeg.ca/institutionalanalysis/docs/procedures/student-non-academic-misconductprocedures.pdf> In addition to providing these links on their course outlines, instructors are encouraged to discuss the Respectful Working and Learning Environment Policy with students. Instructors whose mode of delivery includes Zoom or a similar platform should clarify expectations for appropriate remote classroom behaviour or decorum (e.g., being on time, muting/unmuting, raising hand, reacting, etc.), and make appropriate allowances in order to respect the privacy of students (e.g., clarifying need to have video on/off).

12. **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; such consequences could possibly involve legal sanction under the Copyright policy <https://copyright.uwinnipeg.ca/basics/copyright-policy.html>
13. **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 <https://www.uwinnipeg.ca/research/ethics/human-ethics.html>
14. **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>)
15. **Accessibility Services.** Students with documented disabilities, temporary or chronic medical conditions, requiring academic accommodations for tests/exams (e.g., private space) or during lectures/laboratories (e.g., note-takers) are encouraged to contact Accessibility Services (AS) at 204-786-9771 or accessibilityservices@uwinnipeg.ca to discuss appropriate options. All information about a student’s disability or medical condition remains confidential <http://www.uwinnipeg.ca/accessibility>.
16. The University of Winnipeg promotes a scent-free environment. Please be respectful of the needs of fellow classmates and the instructor by avoiding the use of scented products while attending lectures and labs. Exposure to perfumes and other scented products (such as lotion) can trigger serious health reactions in persons with asthma, allergies, migraines or chemical sensitivities.
17. **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/>.