



University of Manitoba
Clayton H. Riddell Faculty of Environment, Earth, and Resources
Department of Environment and Geography

TABLE OF CONTENTS

COURSE DETAILS..... 3

INSTRUCTOR CONTACT INFORMATION..... 3

COURSE DESCRIPTION 4

GENERAL COURSE INFORMATION..... 4

COURSE GOALS 4

USING COPYRIGHTED MATERIAL 4

RECORDING CLASS LECTURES 4

TEXTBOOK, READINGS, MATERIALS 5

COURSE TECHNOLOGY 5

CLASS COMMUNICATION..... 5

EXPECTATIONS: I EXPECT YOU TO 5

STUDENTS ACCESSIBILITY SERVICES 6

CLASS SCHEDULE..... 6

COURSE EVALUATION METHODS 7

GRADING 7

REFERENCING STYLE 8

ASSIGNMENT DESCRIPTIONS 8

ASSIGNMENT GRADING TIMES 8

ASSIGNMENT EXTENSION AND LATE SUBMISSION POLICY 8

Course Details

Course Title & Number:	GEOG 2310: Process Hydrology (Fall 2018)
Number of Credit Hours:	3.000
Class Times & Days of Week:	Tuesdays and Thursdays, 10:00 am - 11:15 am
Location for classes:	Wallace 315
Pre-Requisites:	(GEOG 1290 or GEOG 1291 (C), or (GEOG 1200) or GEOG 1201 (C)), and (PHYS 1020 or PHYS 1021 (C), or PHYS 1050 or PHYS 1051 (C), or MATH 1500 or MATH 1501 (C), or MATH 1510 (C), or MATH 1520 (C), or MATH 1530 (C)), or permission of department head.

Instructor Contact Information

Instructor(s) Name:	Dr. Matthew Morison
Preferred Form of Address:	Matt
Office Location:	Sinnott 220B
Office Hour:	Tuesdays, 11:30 AM – 12:30 PM
Email:	Matt.Morison@umanitoba.ca I will generally return emails during business hours (9 AM to 5 PM) within 24 hours that they are received, Monday through Friday, excluding holidays. Emails received on Friday may be answered the following Monday.
Contact:	Email is my preferred mode for contact. Also, I will often be available right after class to discuss course material in person.

Course Description

Hydrology is the geoscience dealing with the terrestrial waters of the Earth-Atmosphere system, their occurrence, distribution, and circulation, their chemical and physical properties and their interaction with the environment. The course will expose students to the fundamental processes that dictate the occurrence and distribution of water in the hydrologic cycle, its quality, and its role in shaping both living and non-living components of the planet's climate and environment. In practice, hydrologists need to quantify rates at which water is exchanged among the atmosphere, ground, and the ocean, and this often involves manipulating data and solving sets of equations. It's fairly easy to lose sight of the conceptual part of the discipline once you focus on techniques. Thus, a goal of the course is to give a balanced introduction of hydrology -- one that includes a description of the physical processes plus a coherent presentation of the theories and techniques that are used in practice.

General Course Information

This is a lecture only course (no laboratory section). Assignments (for credit) and practice questions (not for credit) will be posted online periodically over the term to practice the application of theory and methods discussed in class. Although the instructor will provide many of the lecture slides, some problem solving exercises may be done interactively in class and not included in the slides made available to the students.

Course Goals

The objective of this course is to understand the fundamental components of the hydrologic cycle, and the relationship of water to living and non-living systems. A goal of the course is to give a balanced introduction of hydrology -- one that includes a description of the physical processes plus a coherent presentation of the theories and techniques that are used in practice.

Using Copyrighted Material

Please respect copyright. We will use copyrighted content in this course. Copyrighted works, including those created by me, are made available for private study and research and must not be distributed in any format without permission. Do not upload copyrighted works to a learning management system (such as UM Learn), or any website, unless an exception to the *Copyright Act* applies or written permission has been confirmed. For more information, see the University's Copyright Office website at <http://umanitoba.ca/copyright/> or contact um_copyright@umanitoba.ca.

Recording Class Lectures

The course instructor (Matthew Morison) and the University of Manitoba hold copyright over the course materials, presentations and lectures which form part of this course. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission by the course instructor. Course materials (both paper and digital) are for the participant's private study and research.

Textbook, Readings, Materials

Recommended Text: Davie, T., 2008, Fundamentals of Hydrology, 2nd Edition, Routledge Fundamentals of Physical Geography Series, New York. pp 200.

- While not compulsory as to avoid financial barriers to academic success, readings from this text will accompany much of the lecture material and provide an additional foundation of understanding for the course.

Other compulsory reading material may be provided online through the UM Learn course webpage throughout the term.

Course Technology

It is the general University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical and legal manner. The student can use all technology in classroom setting only for educational purposes approved by instructor and/or the University of Manitoba Disability Services. Student should not participate in personal direct electronic messaging / posting activities (e-mail, texting, video or voice chat, wikis, blogs, social networking (e.g. Facebook) online and offline “gaming” during scheduled class time. If student is on call (emergency) the student should switch his/her cell phone on vibrate mode and leave the classroom before using it.

Course material will be provided through UM Learn, for information on access and navigation of this resource, see the [Centre For The Advancement Of Teaching & Learning](#).

Class Communication

The University requires all students to activate an official University email account. For full details of the Electronic Communication with Students please visit:

[http://umanitoba.ca/admin/governance/media/Electronic Communication with Students Policy - 2014 06 05.pdf](http://umanitoba.ca/admin/governance/media/Electronic_Communication_with_Students_Policy_-_2014_06_05.pdf)

Please note that all communication between myself and you as a student must comply with the electronic communication with student policy

([http://umanitoba.ca/admin/governance/governing_documents/community/electronic communication with students policy.html](http://umanitoba.ca/admin/governance/governing_documents/community/electronic_communication_with_students_policy.html)). You are required to obtain and use your U of M email account for all communication between yourself and the university.

Expectations: I Expect You To

Please be courteous to your fellow students by showing up on time, and refrain from social talk once the class has begun - although you are encouraged to get to know each other before or after class. Students can use technology (e.g., tablets and notebook computers) in classroom setting only for educational purposes approved by instructor and/or the University of Manitoba Disability Services. Students must not use technologies (e.g, cell phones, computers, tablets) for social applications during the class period. Cell phones should be switched off or at least with

ringer off. Class attendance is compulsory. The expectation is that everyone participates in class discussions.

I will treat you with respect and would appreciate the same courtesy in return. See the University of Manitoba Respectful Work and Learning Environment Policy.

Academic Integrity:

Students should acquaint themselves with the University's policy on academic misconduct. (http://umanitoba.ca/student/studentdiscipline/academic_misconduct.html). Below are some tips:

- Learn what is meant by plagiarism, cheating, impersonation and academic fraud
- Unless otherwise specified all work is to be completed independently.
- Keep track of references and sources of information used in written assignments (including web references with date)
- Attribute the source of ideas and material in your written submission
- If in doubt, consult your instructor.

Students Accessibility Services

If you are a student with a disability, please contact SAS for academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.

Student Accessibility Services <http://umanitoba.ca/student/saa/accessibility/>

520 University Centre

204 474 7423

Student_accessibility@umanitoba.ca

Class Schedule

Course material will be organized according to the following modules. Some modules require more than one lecture to cover. Modules may be subject to change, removal, or presented in a different order depending on the class dynamics. Text chapters associated with the module are given. Lectures will also incorporate material from sources other than the course text.

Module	Class content	Associated readings from course text*
1	Introduction to hydrology, properties of water, dimensions and units	Chapter 1
2	Atmospheric scales, systems, and balances	Chapter 1
3	Water in the atmosphere	Chapters 1 & 3
4	Precipitation	Chapter 2

5	Snow and ice	Chapter 4
6	Evaporation	Chapter 3
7	Soil-water and soil-plant-atmosphere interactions, evapotranspiration	Chapter 4
8	Groundwater	Chapters 4 & 5
9	Infiltration and run-off	Chapter 5
10	Streamflow	Chapter 6
11	Watershed hydrology	Chapters 5 & 6
12	Surface water: ponds, wetlands, lakes	
13	Water quality	Chapter 7
14	Water management and society	Chapter 8
15	Modern methods and techniques in hydrology	
	Review as time permits	

*Lectures will also incorporate material from sources other than the course text.

Course Evaluation Methods

You are responsible for all material covered in class lectures, readings, and assignments. Allocation of marks is as follows:

- One mid-term test: 25%
 - Tentative date for term test is: Thursday, October 18. Students will have the entire class duration (75 minutes) to complete the term test.
- Three term assignments: 3 @ 10% each = 30%
 - Details, including expectation and due dates surrounding the term assignments will be outlined in class and posted/submitted through UM Learn.
- Final Exam: 45%
- Total is 100%

The mid-term will draw from material covered both from lectures, material posted on UM Learn, and assignments. The mid-term is tentatively scheduled for Thursday, October 18. The final exam will include all course material, with some emphasis on material covered after the mid-term test. The exam will be 2 hours in length and will be scheduled by the university.

Grading

Letter Grade	Percentage out of 100
A+	95-100
A	86-94
B+	80-85
B	72-79
C+	65-71
C	60-64

D	50-59
F	Less than 50

Referencing Style

Assignments should use the APA reference style as outlined [here](#).

Assignment Descriptions

There will be three course assignments over the term. Assignments will consist of short- answer questions associated with the application of basic equations, data and other resources for characterizing water in the environment and the estimation of water flows and properties. In addition, long-answer questions focusing on assigned readings will focus the student on important methods, outcomes, and/or implications of the research contained in the material. Specific details for each assignment, including expectations and due dates will be outlined in class and posted/submitted through UM Learn.

Assignment Grading Times

Assignments which are submitted on time will be graded within 1 week of submission or sooner. The final date for voluntarily withdraw from this course is November 19, 2018. If completed and submitted on-time, students will have access to their mid-term (worth 25% of the course grade) and two out of three assignments (worth 10% of the course grade each) for a total of 45% of their course grade prior to this date. Students are encouraged to talk with the instructor before a decision to withdraw is made.

Assignment Extension and Late Submission Policy

Unless otherwise stated, assignments are due at **4 pm** of the due date and submitted through UM Learn. Students will not be permitted to write make-up tests or hand in assignments late, except for documented medical or compassionate reasons. Assignments will be penalized -10% for each day, or part therein, late.