



**University of Manitoba**  
**Faculty of CHRFEER**  
**Department of Environment and Geography**

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## COURSE DETAILS

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<b>Course Title &amp; Number:</b>	GEOG 2310 Introduction to Physical Hydrology
<b>Number of Credit Hours:</b>	3
<b>Class Times &amp; Days of Week:</b>	10:00 to 11:15 Tuesdays and Thursdays
<b>Location for classes/labs/tutorials:</b>	315 Wallace
<b>Pre-Requisites:</b>	GEOG 1290 (Intro Physical Geography) or permission of instructor

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## Instructor Contact Information

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<b>Instructor(s) Name:</b>	Tim Papakyriakou
<b>Preferred Form of Address:</b>	Tim
<b>Office Location:</b>	594 Wallace Bldg
<b>Office Hours or Availability:</b>	Available by appointment scheduled via email
<b>Office Phone No.</b>	474-8513
<b>Email:</b>	Tim.Papakyriakou@Umanitoba.ca I usually respond to email within the same day Monday to Friday.
<b>Contact:</b>	Email is my preferred mode for contact. Also, I will often be available after class to discuss course material in person.

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## 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.

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## General Course Information

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This is a lecture only course (no laboratory section). Activities (for credit and not for credit) will be scheduled 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, most of the problem solving exercises will be done interactively in class and not included in the slides made available to the students.

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## Course Goals

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The objective of this course is to understand the nature and controls over water, and its relationship to the 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.

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## Using Copyrighted Material

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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](mailto:um_copyright@umanitoba.ca).

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## Recording Class Lectures

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The course instructor (Tim Papakyriakou) 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 (Tim Papakyriakou). Course materials (both paper and digital) are for the participant's private study and research.

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## Textbook, Readings, Materials

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### Required Text

Davie, T., 2008, Fundamentals of Hydrology, 2<sup>nd</sup> Edition, *Routledge Fundamentals of Physical Geography Series*, New York. pp 200.

Several chapters in this text are pertinent. It is in the student's best interest to have access to this textbook.

Supplementary readings – will be periodically provided.

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## Course Technology

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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.

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## Class Communication

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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.

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## Expectations: I Expect You To

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Please be courteous to your fellow students by showing up on time, refrain from social talk. The student 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. Students with excessive unexcused absences may be subject to debarment. The expectation is that everyone participates in class discussions.

I will treat you with respect and would appreciate the same courtesy in return. See [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](http://umanitoba.ca/student/studentdiscipline/academic_misconduct.html)). Below are some tips:

- Learn what is meant by plagiarism, cheating, impersonation and academic fraud
- 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.

Unless otherwise specified all work is to be completed independently.

## Students Accessibility Services

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### Student 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](mailto:Student_accessibility@umanitoba.ca)

## Class Schedule

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Course material will be organized according to the following modules. Some modules require more than one lecture to cover. Modules may be substituted, removed 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	Required Readings from course text*
	Major concepts to be covered	
1	Introduction to Hydrology and properties of water; Dimensions and units	Chapter 1
2	Atm. scales, systems and balances	Chapter 1
3	Water in the atmosphere	Chapter 1 & 3
4	Precipitation	Chapter 2
5	Snow and snow hydrology	Chapter 4
6	Evaporation	Chapter 3
7	Snow and snow hydrology	Chapter 4
8	Soil Water and Soil-Plant-Atmosphere relations, including Evapotranspiration	Chapter 4
9	Groundwater	Chapters 4-5
10	Infiltration and Run-off	Chapter 5
11	Stream Flow	Chapter 6
12	Watershed hydrology	Chapters 5 & 6
13	Water quality	Chapter 7

14	Contemporary issues in hydrology (climate change; changing water use by society, role in nutrient cycles; link to ocean and atmosphere science)	
	Review	

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

## Course Evaluation Methods

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You are responsible for all material covered in class lectures, readings, assignments and designated areas of the textbook.

Allocation of marks is as follows:

- 1 mid-term test: 20%
- Five term assignments: 5 @ 7% each = 35%  
(details surrounding the term assignments will be outlined in class.)
- Final Exam: 45%
- Total is 100%

Tentative date for term test is: October 19

There will be 5 course assignments. Three to four 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.

Two to three reading assignment will require the student to reflect on pertinent papers. Questions on the readings will focus the student on important methods, outcomes, and/or implications of the research contained in the paper.

The mid-term will draw from material covered both from lectures, assigned readings including pertinent sections of the course text, and assignments. The mid-term is tentatively scheduled for October 19.

The final exam will include all course material, with emphasis of material covered after the mid-term test. The exam will be 2 hours in length and will be scheduled by the university.

## Grading

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Indicate your grading scale. A sample is given below that you can adjust to your course expectations.

Letter Grade	Percentage out of 100
A+	90-100
A	80-89
B+	75-79
B	70-74
C+	65-69
C	60-64

D	50-59
F	Less than 50

## Referencing Style

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Assignments should use the APA reference style. See <http://libguides.lib.umanitoba.ca/c.php?g=298394&p=1988884>

## Assignment Descriptions

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There will be 5 course assignments. Three to four 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.

Two to three reading assignment will require the student to reflect on pertinent papers. Questions on the readings will focus the student on important methods, outcomes, and/or implications of the research contained in the paper.

The final exam will include all course material, with emphasis of material covered after the mid-term test.

## Assignment Grading Times

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Usually assignments will be graded within 1 week of submission or sooner. The final **date for voluntarily withdraw** from this course is **November 17**. Students may have access to their marks prior to this date and are encouraged to talk with the instructor before a decision to withdraw is made.

## Assignment Extension and Late Submission Policy

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Unless otherwise stated, assignments are due at 4 pm of the due date and submitted as hard copies. 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% each day, or part therein, late.