

# GGR334 H1F: WATER RESOURCES MANAGEMENT

2019 Fall

## Course Outline (Draft)

**Instructor:** Dr. Romila Verma

**Lecture Room:** SS1083

**Lecture Time:** Wednesdays, 12 to 2 pm

**Office Hours:** Wednesdays between 11.00 am to 12.00 pm, Room SS5061 or by appointment.

**Email:** [romila.verma@utoronto.ca](mailto:romila.verma@utoronto.ca)

**Phone:** 416-930-8659

**TA:** Bartosz Osieki [bartosz.osieki@mail.utoronto.ca](mailto:bartosz.osieki@mail.utoronto.ca)

Emma Windfield [emma.windfield@mail.utoronto.ca](mailto:emma.windfield@mail.utoronto.ca)

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### Recommended Preparation

**Exclusion:** GGR288H5

**Recommended Preparation:** 8.0 FCE's including one of JEG100H1/GGR100H1, GGR107H1, GGR223H1

Or permission of the instructor

### Course Description

Water is one of the most precious resources on this earth but its mindless consumption and abuse has created a crisis in many parts of the world. Therefore, this course is designed to prepare future water resource managers to effectively understand the complex problems, dynamics and techniques to manage our water resources.

By the end of this term, students are expected to learn about the following topics and be able to apply sound management techniques in order to solve real world water-related problems:

- Basic concepts of hydrology and water resource, like water properties, hydrological cycle, sources of water and water balance calculation.
- Impacts of population, urbanization, agriculture and climate change on water. Also, to explore the linkages between water and human health.

- To understand and apply water management techniques like, demand management, soft path approach, integrated water resource management, water governance and financing.

Case studies from the developed and from developing countries as well as rural and urban areas will be examined.

### **Required Readings**

There is no required textbook for this course. Readings will be posted on Quercus.

### **Evaluation**

**In-Class Assignments (3%):** Since this course does not have any tutorials, introducing in-class activities will ensure class participation, interaction with the instructor and problem solving opportunities for the students. This component of evaluation will be based on answering a series of survey questions after the in-class assignment. All survey questionnaires are due after the in-class assignment and cannot be submitted with accompanying lecture attendance.

There are three in-class activities for this course worth 1.5 marks each. Since students need to complete only 2 of 3 assignments, no late assignments will be accepted.

**Mid-term Test (22%):** This test will be for an hour and will be administered in two parts. The first part will consist of a series of quiz and multiple choice questions. Second part will be short question and answers.

**Research Proposal (10%):** You will be able to choose a topic of your interest from the list provided. The research proposal will be approximately 500 words plus 6 references and should briefly introduce the topic, objectives and the structure of the paper.

**Research Paper (35%):** This is an opportunity for the students to examine and apply the information they have learnt in the class to the real world water related issues. The research paper should be between 8-10 pages. At least 10 references are expected.

**Final Exam (30%):** This exam will be for two hours and will be administered in three parts. The first part will consist of a series of quiz questions. The second part will be short question and answers. The third part will be one essay question.

### **Grading Scheme**

<b>Assignments</b>	<b>Percentage</b>	<b>Due Date</b>
In-Class Assignments	3%	Sept 18, Oct 9, Oct 23
Research paper proposal	10%	12.10 pm, October 9
Mid- term test	22%	12.15- 1.15 pm, October 16

Research paper	35%	12.10 pm December 4
Final exam	30%	TBA

**Late penalty: 5% per day including weekends**

**Requests for Re-grading**

Must be in memo format, in writing ½ to 1 page in length, containing rational based adjustments to the assignment marking key; you must include the original paper and TA’s marking key sheet; note - the remarked assignment may receive a lower mark – Dr. Verma and the TAs will not entertain lobbying for higher grades.

**Late Assignments**

Accepting late papers is solely at the discretion of the instructor. Being too busy with other school work will not be accepted for extensions. Requests for extensions must be made in office hours, or in writing or via email with your rationale explained before the due date. All assignments should be handed in at or before the beginning of the class on the due date specified. Assignments should be given directly to the professor. All late assignments should be turned into the drop box located outside of the Geography main office, (Sidney Smith, Room 5047). You can only turn in a late assignment during business hours. The instructor is not responsible for assignments put under the office door and those assignments will be given a late penalty based on the date the instructor finds it under the door.

**Medical Certificate & Documentation Supporting Extensions, etc.**

Students must use the University’s official **Verification of Student Illness or Injury Form** as the standard documentation requirement for medical-based extension requests. A copy can be found on the web at:

<http://www.illnessverification.utoronto.ca/getattachment/index/Verification-of-Illness-or-Injury-form-Jan-22-2013.pdf.aspx>

Students must provide a medical certificate and/or provide other documented proof, where feasible, if you request an extension for assignments, term test during class time, etc. This documentation will be kept secure and confidential under provincial privacy legislation.

A student who is registered with Accessibility Services, or otherwise provides appropriate documentation to their college registrar, may receive a Registrar’s Letter attesting to his/her legitimate need for an extension or other consideration, which will be accepted in lieu of the student providing me with the supporting documentation directly. This protects the student’s personal information, makes it easier for him/her to request and get appropriate consideration. I am the contact person for Accessibility Services for the Centre.

## **Student Laptop Guidelines in the Classroom**

- Do not use your laptop for entertainment during class time.
- Turn the sound off on your computer.
- Do not display material on your screen which may be offensive or distracting to your peers.

## **Email Etiquette**

You can email me directly with your questions and concerns. Questions regarding assignments will be answered if sent via email to me. Emails might not be returned promptly during the weekend.

## **Course Web Site**

The main web site for the course is Quercus which will be used for the following:

- Lecture slide repository, assignment instructions, required readings.
- Grades will be posted on the Quercus except Final Exams.

## **Accessibility Needs**

The University of Toronto is committed to accessibility. If you require accommodations or have any accessibility concerns, please visit <http://studentlife.utoronto.ca/accessibility>

## **Academic Integrity**

Plagiarism is an academic offense at the University of Toronto. Plagiarism is quoting (or paraphrasing) the work of an author (including the work of fellow students) without proper use of citation. Quotation marks are required when using an author's words. Students also should not be submitting any academic work for which credit has previously been obtained or is being sought, without first discussing with the instructor. Please consult the "Rules and Regulations" section of the Arts and Science Calendar ([http://www.artsandscience.utoronto.ca/ofr/calendar/Rules\\_&\\_Regulations.html](http://www.artsandscience.utoronto.ca/ofr/calendar/Rules_&_Regulations.html)) for further information and check the 'How not to plagiarize' website at: <http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>.

## LECTURE SCHEDULE- FALL 2019

Date	Lecture Topic	Readings/Due Dates
September 11	Introduction	Research topics to be handed out
September 18	Is Water a Right or Commodity? <b>In-class Assignment- 1</b>	Readings posted on Quercus
September 25	Human Impacts on the Hydrological Cycle	Readings posted on Quercus
October 2	Water as Resource: Municipal Water Use	Readings posted on Quercus
October 9	Agriculture and Industrial Water Use <b>In-class Assignment- 2</b>	Readings posted on Quercus <b>Research proposal Due in class</b>
October 16	<b>Mid-term test</b>	<b>From Lectures 1 to 5</b>
October 23	Writing Lab: Research Paper Guidelines Water Impacts: Climate Change and Human Health <b>In-class Assignment- 3</b>	Readings posted on Quercus
October 30	Management Approaches to Water	Readings posted on Quercus
November 13	Governance of Water Resources	Readings posted on Quercus
November 20	Regeneration of Watersheds: Case-Studies from Around the World	Readings posted on Quercus
November 27	Approaches to Water Financing and Other Emerging Issues Final Exams Guidelines	Readings posted on Quercus
December 4	Guest Lecturer TBA	<b>Research paper due in class</b>