

" WATER "
(EES A07)

Instructor: Dr. Jovan R. Stefanovic

Lecture: Monday 7 – 10 pm (Zoom meetings)

Email: jovan.stefanovic@utoronto.ca

Office hours: Monday 6 - 7 pm (Zoom meetings)

Course TAs: Bhargav Patel (br.patel@alum.utoronto.ca)

Larissa Pizzolato (larissa.pizzolato@mail.utoronto.ca)

Sayuri Sagisaka (sayuri.sagisaka@mail.utoronto.ca)

Nigarsan Kokilathanan (nigarsan.kokilathanan@mail.utoronto.ca)

Textbook: *Water Resources*, Shimon Anisfeld, 2010, Island Press

Grading:	Quizzes (4 x 12%)	48%
	Final Examination:	52%

Intent of the course:

This course consists of a survey of the planet's water resources and the major issues facing the use of water. The intention of the course is to familiarize students with the current water crisis and with present approaches for managing this essential resource more effectively in the face of mounting environmental challenges and natural resource pressures. Thus, one of the goals of this course is to give you a comprehensive view of water resources and provoke you to think on how to achieve the sustainable use of this resource. Topics include: Earth, the watery planet; water the last great resource; Canada's waters; Ontario's waters; social and ecological problems: including water scarcity, pollution, flooding, conflicts over water; water in an era of global change and protecting our waters. Case studies such as the Walkerton tragedy will be studied.

COURSE LEARNING OBJECTIVES:

1. Understand the importance of the freshwater and marine environments.
2. Appreciate the ecosystem services that freshwater provides.
3. Recognize the uneven distribution of fresh water and its implications on humans.
4. Discuss human uses of fresh water and their impacts on freshwater environments
5. Be aware of water as a source of conflict and hazard.
6. Understand the challenges to a sustainable future for water resources.

Week/Lecture #

LECTURES AND QUIZZES SCHEDULE

1. **Perspectives on Water and Environmental Issues**..... Sep. 13th
Video #1: Last Call at the Oasis (see Library Course Reserves on Quercus)
2. **Water Circulation Through Environment**..... Sep. 20th
(Optional Readings: Chapters 2.1-2.2).
3. **Water Availability and Water Use** (Optional Reading: Chapter 3)..... Sep. 27th
Mock Quiz (online, available from Sep.27 to Oct.1st)
4. **Water Pollution: Sources, Impacts & Solutions**
(Walkerton case study). Optional Readings: Chapters: 2.3; 9.1-9.5; 10.4.....Oct. 4th
QUIZ #1: online, testing Lectures 1,2 and 3, **TA (Larissa P.)**

Thanksgiving Day- Reading week - Oct. 11th
5. **Dealing with Floods and Water Scarcity** (Optional Reading: Chapters 4&5)... Oct. 18th
(**Video #2:** Tennessee and European flooding, summer 2021)
6. **Water in an Environment of Global Change: Impacts of Climate Change and Land Use** (Chapter 6)..... Oct.25th
QUIZ #2: online testing Lectures 4, 5 and the **videos #1 and #2, TA (Bhargav P.)**
7. **Soft and Hard: Technologies for Sustainable Water Management**
Optional Textbook Reading: Chapter.7.....Nov. 1st
Video #3: What Happens When a Huge Dam Is Opened?
8. **Humans and Aquatic Ecosystems: Finding the Right Balance; Water and Energy.** (Optional readings Chapters 8 and 11.1).....Nov. 8th
QUIZ #3: online testing Lectures 6, 7 and the **videos #1 and #3, TA (Sayuri S.)**
9. **Canadian's and Ontario's Waters: Case Studies and Applications to Water Management**.....Nov. 15th
Video#4: What's so great about the Great Lakes?
10. **Getting More from Less in Agriculture Water Use**.....Nov. 22nd
Optional Reading: Chapter 10
QUIZ #4: online testing Lectures 8, 9 and the **video#4, TA (Nigarsan |K.)**
11. **Economics in Water Management and Water as a Source of Conflict**
(Optional Readings: Chapters 12&13)
Video #5: Water Wars: Struggle in the Holy Land..... Nov. 29th
(see Library Course Reserves on Quercus)
12. **Course review** Dec. 6th

I will follow this schedule as closely as possible, but things being what they are, some of these topics may "overflow" over into other time slots and slight alterations to the schedule may occur.

LECTURES

The lecture material will be presented online via Zoom meetings and posted on Quercus. The lecture will be synchronized, delivered in real time or prerecorded and played during the lecture time. In both cases lectures will be interrupted with Question/Answer sessions.

QUIZZES

There are no tutorials in this course. Teaching Assistant will hold discussion board and office hours to help with the quizzes. Students are encouraged to actively consult with the TA regarding any problems or questions about the preparation of the quizzes. Each TA is responsible for only one quiz (see below), so please consult only with TA who is responsible for the given quiz. You will have 4 quizzes during the term, each quiz is worth 12% of the final grade. Each quiz is scheduled at the specific day (see lecture schedule or see below) and they will **always start at 7pm on Quercus**. After the quiz is completed and 15 minutes break, I will continue with the lecture material (around 8pm). **If you have a conflict with the quiz at 7 pm, please note that this will not be accepted as a valid reason for accommodation.**

Format of the quizzes is:

Multiple Choice questions, True/False questions, Matching questions, Fill in the blanks, Multiple dropdowns. **The quizzes will content 30 questions for 45 minutes, one question per page and you can't move backwards and review the questions.** The textbook is not mandatory, but since most of the lectures follow the textbook, I recommend that you read the textbook for quizzes or exam preparation. Some questions for quizzes and exam will come from posted videos.

Please Note that we will not be able to show quiz questions and correct answers after the quiz is submitted.

<i>QUIZ</i>	On Quercus	TA
Mock quiz	Sep. 27- Oct.1st	Larissa Pizzolato
Quiz #1	Oct. 4 (at 7 pm)	Larissa Pizzolato
Quiz #2	Oct. 25 (at 7 pm)	Bhargav Patel
Quiz #3	Nov.8 (at 7 pm)	Sayuri Sagisaka
Quiz #4	Nov.22 (at 7 pm)	Nigarsan Kokilathanan

The mock quiz is not for mark. We would recommend that everyone does it, as this will allow you to pinpoint and resolve any technical difficulties (internet connections, computer performance etc.) that might arise. By writing the mock exam, you will become familiar with the online settings and this will also help us to see if there are any problems ahead of time.

More details on the quizzes will be circulated during the term.

MISSED QUIZZES

If you miss the quiz for a verifiable reason (i.e. you have a medical note or have made provisions for a VERY good reason with the TA **PRIOR** to the quiz) please submit documentation to appropriate TA **within 4 business days after the quiz, the last day is Friday at 5pm (in the same week as the quiz)**. After that the makeup quiz will be announced by TA. If you miss the makeup quiz with a verifiable reason after you submit the proof for your absence (**NEW medical note with a different date**), the weight of the quiz will be transferred to the final exam (in this case your final will worth 64% of the final grade).

If you simply “miss” the quizzes, you will receive a mark of zero for them. If the reason is medical, an official UTSC medical note must complete by a doctor who examined you while you were ill/injured. The medical note can be downloaded at:
http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf.
All collected documents should be submitted to TA for consideration.

FINAL EXAMINATION

The final examination will be held during the final examination period, exact time and date TBA. **The final exam will cover lectures 2-11 and the video(s) presented during the term.** The exam is worth 52% of the final grade. Format and setup of the final exam will be similar to the quizzes. More details will be announced during the term.

RECOMMENDED TECHNOLOGY REQUIREMENTS

Quercus is optimized for Google chrome or Mozilla Firefox. The system does not support the following browsers: Internet Explorer, Microsoft Edge, Safari. There are known issues with those browsers.

Please see the link below for information regarding Recommended Technology Requirements for Remote/Online Learning at U of T.

[https://www.viceprovoststudents.utoronto.ca/covid-19/tech-requirements-online-learning/Links to an external site.](https://www.viceprovoststudents.utoronto.ca/covid-19/tech-requirements-online-learning/Links%20to%20an%20external%20site)

Not all of these will be needed for EESA07 (more info will follow) but it might be useful for your other courses.

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ACCESSIBILITY STATEMENT

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. (416) 287-7560 or ability@utsc.utoronto.ca.

FURTHER READINGS

Cech [Thomas V.](#)2009. *Principles of water resources: history, development, management, and policy*, John Wiley and Sons.

Christopherson, R.W.&Mary-Lousie Byrne.2006. *Geosystems An Introduction to Physical Geography*, Canadian Ed. Pearson, Practice Hall.

Grover [Velma I.](#) 2007. *Water: a source of conflict or cooperation?* Science Publishers.

Grover [Velma I.](#) 2006. *Water: global common and global problems*. Science Publishers

Kumar Arvind. 2004. *Water pollution*. S.B. Nangia. A.P.H. Publishing Corporation.

Robert Lenton and Mike Muller.2009.*Integrated Water Resources Management in Practice*. Earthscan.

Sam Laki, Krishna Kumar Nedunuri and Ramanitharan Kandiah, 2014. *Introduction to Water Resources*, second edition. Kendall Hunt publishing company.

Smith,K. and Ward,R.1998. *Floods*. New York: John Wiley & Sons

Tarbuck [Edward J.](#), Lutgens [Frederick K.](#), Tasa [Dennis](#).2010. *Earth Science*. Pearson Education, Limited.

Final Note:

Check Quercus regularly. All announcements, lecture notes, quizzes info, quiz marks and other information will be posted on Quercus.