

" WATER "
(EES A07)

Lecture: Monday 7 pm – 10 pm (in-person), **Room AC 223**

Email: jovan.stefanovic@utoronto.ca

Office hours: Monday 6 pm – 7 pm, ESCB, Room 340 (Sep.19 – Dec.5)

Course TAs: TBA

Textbook(optional): *Water Resources*, Shimon Anisfeld,2010, Island Press

Grading:	Quizzes online via Quercus (2 x 10%)	20%
	Midterm test	35%
	Final Examination:	45%

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 familiarizes 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.

1. **Perspectives on Water and Environmental Issues**..... Sep. 12th
Video #1: Last Call at the Oasis (selected scenes, see Library Course Reserves on Quercus)
2. **Water Circulation Through Environment**..... Sep. 19th
 (Optional Readings: Chapters 2.1-2.2).
3. **Water Availability and Water Use** (Optional Reading: Chapter 3)..... Sep. 26th
Mock Quiz #1 (online, available from Sep.26 to Oct.2nd)
4. **Water Pollution: Sources, Impacts & Solutions**
 (Walkerton case study). Optional Readings: Chapters: 2.3; 9.1-9.5; 10.4.....Oct. 3rd
QUIZ #1: online, testing Lectures 1,2, 3 and **Video #1** (selected scenes).

Thanksgiving Day- Reading week -Oct. 10th
5. **Dealing with Floods and Water Scarcity** (Optional Reading: Chapters 4&5)..... Oct.17th
(Video #2: European Drought, Summer 2022)
6. **MIDTERM TEST (in class/in-person)Oct. 24th**
7. **Water in an Environment of Global Change: Impacts of Climate Change and Land Use** (Chapter 6)..... Oct.31st
8. **Soft and Hard: Technologies for Sustainable Water Management**
 Optional Textbook Reading: Chapter.7..... Nov. 7th
Video #3: The Dilemma of Dams: What are the True Costs of Damming a River?
9. **Humans and Aquatic Ecosystems: Finding the Right Balance; Water and Energy.** (Optional readings Chapters 8 and 11.1)..... Nov. 14th
Mock Quiz #2 (online, available from Nov.14 to Nov.20)
10. **Canadian's and Ontario's Waters: Case Studies and Applications to Water Management**..... Nov. 21st
Video#4: What's so great about the Great Lakes?
QUIZ #2: online testing Lectures 4, 5 &7 and **videos #2 and #3.**
11. **Getting More from Less in Agriculture Water Use**..... Nov. 28th
 Optional Reading: Chapter 10
12. **Water as a Source of Conflict and Course Review** Dec. 5th
 (Optional Readings: Chapter 13)
Video #5: Water Wars: Struggle in the Holy Land
 (see Library Course Reserves on Quercus)

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 in-person, Room AC 223.

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, so please consult only with TA who is responsible for the given quiz. You will have 2 quizzes during the term, each quiz is worth 10% 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 a quiz is completed and 25 minutes break, I will continue with the lecture material (AC 223 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 20 questions for 35 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 final 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>QUIZZES(all online)</i>	On Quercus	TA
Mock quiz #1	Sep. 26- Oct.2	TBA
Quiz #1	Oct. 3 (at 7 pm)	TBA
Mock Quiz #2	Nov.14 -Nov.20	TBA
Quiz #2	Nov.21 (at 7 pm)	TBA

The mock quizzes are 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.**

MIDTERM TEST

The midterm test is scheduled on Oct. 24 at 7pm in AC 223. **The midterm test will cover lectures 1, 2, 3, 4 and 5.** The test is worth 35% of the final grade). **If you have a conflict with the midterm test at 7 pm (Oct.24), please note that this will not be accepted as a valid reason for accommodation.** More details will be announced during the term.

MISSED QUIZZES and MIDTERM TEST

If you miss quizzes and /or midterm you have to formally self-declare absences through DPES on-line self-declaration form (<https://www.utoronto.ca/physsci/self-declaration-absence-form-0>). You can also find the form on the front page of DPES website, just underneath the picture with the “smiley faces” during the groundbreaking of our EV building (<https://www.utoronto.ca/physsci/welcome-physical-environmental-sciences>). These on-line requests will be sent directly to your instructor, as well as to the department (DPES). Please note that you will still have to submit your absence through ACORN. Both submissions have to be done **within 4 business days after the regular quiz, so the last day is Friday at 11:59 pm (in the same week as the quiz or midterm)**. The self-declarations submitted after this time will not be considered. After checking the validity of your self-declarations (**Please read the self-declaration instructions**), the makeup quiz or makeup midterm test will be announced by TA. If you miss the makeup quiz or makeup midterm test with a verifiable reason after you submit the new Student Absence Form (**NEW on-line self -declaration**), the weight of the quiz will be transferred to the final exam (in this case your final exam will be worth 55% of the final grade) or if you miss makeup midterm test the final exam will be worth 80%. The mark transfer from quiz to final exam you can claim only for one quiz. **The submission of the new on-line self- declaration form (for makeup quiz or makeup midterm test) have to be done in four business days, after this time they will not be considered.**

If you simply “miss” the quizzes and /or midterm test, you will receive a mark of zero for them.

FINAL EXAMINATION

The final examination will be held during the final examination period (in-person), exact time and date TBA. **The final exam will cover lectures 2-12 and the selected videos presented during the term.** The exam is worth 45% of the final grade. 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
- Tarback [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.