

EESC07H3 F

Groundwater

Fall 2023 Syllabus

Course Meetings

EESC07H3 F

Section	Date & Time	Delivery Mode & Location
LEC01	Monday, 7:00 PM - 10:00 PM	In Person: HW 215

Course Contacts

Course Website: <https://q.utoronto.ca/courses/313072>

Instructor: Dr. Ana Zaknic-Catovic

Email: ana.zaknic.catovic@utoronto.ca

Office Hours and Location: Mondays, 4 - 5 pm, EV340.

Teaching Assistant: Aisha Javed

Email: aisha.javed@mail.utoronto.ca

Office Hours and Location: EV 302. By Appointment.

Additional Notes: All questions related to weekly practice assignments should be directed via email to Aisha.

Course Overview

Groundwater represents the world's largest and most important freshwater resource. This basic course in hydrogeology introduces the principles of groundwater flow and aquifer storage and shows how a knowledge of these fundamental tools is essential for effective groundwater resource management and protection. Special emphasis is placed on the practical methods of resource exploration and assessment; examples of the approach are given for aquifers under environmental stress in southern Ontario, the US, and Africa.

As part of the course, students will build their quantitative skills essential for groundwater problem-solving through weekly posted practice assignments.

Course Learning Outcomes

By the end of the course, students will gain knowledge of groundwater flow physics essential for the quantitative assessment of groundwater resources and their sustainable management.

Prerequisites: EESA06H3 and 1.0 full credit in B-level EES courses

Corequisites: None

Exclusions: None

Recommended Preparation: None

Credit Value: 0.5

Course Materials

All course materials are provided in the form of lectures, assigned readings, and weekly practice assignments.

Optional course readings include recommended textbooks:

1. Applied Hydrogeology by Fetter, C.W. (MacMillan) (all editions)
2. Freeze, A. and Cherry, J., 1979 - Groundwater (Prentice-Hall)
3. Domenico, P. and Schwartz, F., 1990 - Chemical and Physical Hydrogeology (Wiley)

Marking Scheme

Assessment	Percent	Details	Due Date
Mid-Term Exam	30%	In-class Mid-Term Exam (1.5 hours) consists of multiple-choice, true-false, fill-in-the-blanks, short answer plus essay-style questions covering the first four lectures and assigned readings.	2023-10-16
Term Test	25%	Online Term Assignment (1 hour) consists of multiple-choice, true-false, fill-in-the-blanks, and short answer questions covering all up-to-date lectures and assigned readings.	2023-11-13
Final Exam	45%	In-person Final Exam (3 hours) consists of multiple-choice, true-false, fill-in-the-blanks, short answer plus essay-style questions covering all lectures, practice assignments, and assigned readings. The final exam covers all course material presented during the term.	Final Exam Period

Policies & Statements

Plagiarism Detection Tool

Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (<https://uoft.me/pdt-faq>).

Academic Integrity

The University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences.

Potential offences in papers and assignments include using someone else's ideas or words without appropriate acknowledgement, submitting your own work in more than one course without the permission of the instructor, making up sources or facts, obtaining or providing unauthorized assistance on any assignment.

On tests and exams, cheating includes using or possessing unauthorized aids, looking at someone else's answers during an exam or test, misrepresenting your identity, or falsifying or altering any documentation required by the University.

University Land Acknowledgement

I wish to acknowledge this land on which the University of Toronto operates. For thousands of years, it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

Accommodations

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.

AccessAbility Services staff (located in Rm AA142, Arts and Administration Building) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations 416-287-7560 or email ability.utsc@utoronto.ca. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

Use of Generative Artificial Intelligence Tools

Students may use artificial intelligence tools, including generative AI, in this course as learning aids or to help produce assignments. However, students are ultimately accountable for the work they submit.

Students may not use artificial intelligence tools for taking tests, writing research papers, creating computer code, or completing major course assignments. However, these tools may be useful when gathering information from across sources and assimilating it for understanding.

The knowing use of generative artificial intelligence tools, including ChatGPT and other AI writing and coding assistants, for the completion of, or to support the completion of, an examination, term test, assignment, or any other form of academic assessment, may be considered an academic offense in this course.

Recording of Classroom Material by Students

Recording or photographing any aspect of a university course - lecture, tutorial, seminar, lab, studio, practice session, field trip etc. – without prior approval of all involved and with written approval from the instructor is not permitted.

Equity, Diversity and Inclusion

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities.

The University of Toronto is a richly diverse community and as such is committed to providing an environment free of any form of harassment, misconduct, or discrimination. In this course, I seek to foster a civil, respectful, and open-minded climate in which we can all work together to develop a better understanding of key questions and debates through meaningful dialogue. As such, I expect all involved with this course to refrain from actions or behaviours that intimidate, humiliate, or demean persons or groups or that undermine their security or self-esteem based on traits related to race, religion, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex, sexual orientation, gender identity, gender expression, age, marital status, family status, disability, receipt of public assistance or record of offences.