Civil Engineering
CIVENG 4A04
Engineering Hydrology
Fall 2026

McMaster University
ENGINEERING

Instructor Information

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Office Hours:
TBD

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TBD

Class Times

Lectures: Tu 4:30PM - 6:20PM; Th 4:30PM - 5:20PM
Tutorials: Mo 8:30AM - 10:20AM

Class Format

In Person
Course Dates: 09/08/2026 - 12/10/2026
Units: 4.00
Course Delivery Mode: In Person
Course Description: Hydrologic cycle; climate; hydraulic and hydrologic processes, precipitation; unit hydrographs; hydrologic statistics, hydrologic routing; introduction to groundwater flow. Three lectures, one tutorial (two hours); one term
Prerequisite(s): CIVENG 3M03

Instructor-Specific Course Information

Course topics will be delivered through lectures emphasizing the development of physical intuition, mathematical competence, and, introduced for the first time, the ability to use AI tools responsibly to formulate and solve hydrological problems. Students are expected to attend lectures and participate actively. Tutorials will reinforce key concepts through guided review and problem-solving practice.

Important Links

- Mosaic
- Avenue to Learn
- Student Accessibility Services - Accommodations
- McMaster University Library
- eReserves
- Open Education Resources

Course Learning Outcomes

- Develop the competence in the specialized engineering knowledge of local and global hydrologic cycles (Attribute 1.2)
- Gain the ability to perform infiltration calculations (Attribute 4.2)
- Develop the competence to conduct hydrograph routing (Attribute 2.1)
- Gain the ability to manage time and processes effectively, prioritizing competing demands to achieve personal and team goals and objectives (Attribute 6.1)
- Develop the understanding of hydrologic statistics as well as rainfall and streamflow frequency analysis (Attribute 1.1 & 3.2)

Graduate Attributes

The Canadian Engineering Accreditation Board (CEAB) is a division of Engineers Canada and is responsible for accrediting undergraduate engineering programs across Canada. Accreditation by the CEAB ensures that the engineering programs meet a national standard of quality and cover essential educational requirements. Graduate Attributes are a set of qualities and skills that the CEAB expects

engineering graduates to possess. These attributes are a benchmark for the learning outcomes of accredited engineering programs. This section lists the Graduate Attribute Indicators associated with the Learning Outcomes in this course.

Lab Safety

The Faculty of Engineering is committed to McMaster University's Workplace and Environmental Health and Safety Policy which states: "Students are required by University policy to comply with all University health, safety and environmental programs". It is your responsibility to understand McMaster University Workplace and Environmental Health and Safety programs and policies. For information on these programs and policies please refer to McMaster University Health and Safety. The Lab Safety Handbook is available here, as well as on A2L.

It is also your responsibility to follow any specific Standard Operating Procedures (SOPs) provided for some of the experiments and the laboratory equipment. A laboratory-specific set of rules can also be added to ensure that students fully understand laboratory safety rules that are in place prior to their first session.

Course Schedule

WEEK 1	Introduction; The Hydrologic Cycle	
WEEK 2	Precipitation	HW1
WEEK 3	Evapotranspiration	
WEEK 4	Groundwater Flow	HW2
WEEK 5	Soil Moisture & Infiltration	
WEEK 6	Streamflow	HW3
WEEK 7	Runoff Flow	
WEEK 8	Hydrograph	MIDTERM EXAMINATION
WEEK 9	Hydrologic Design	HW4
WEEK 10	Statistical Hydrology	
WEEK 11	Climate Change & Hydrology	HW5
WEEK 12	Term Presentations	

WEEK 13	Review	
FINAL EXAMINATION	Scheduled during the regular University Final Examination period established by the Registrar's Office	

Required Materials and Texts

Please sign in with your MacID here to view your booklist

N.A.

Optional Course Materials

Please sign in with your MacID here to view your booklist

Engineering Hydrology
ISBN: 9390177502
Authors: Subramanya, K.
Publisher: McGraw-Hill

Course Evaluation

Homework assignments	20%
Course project	20%
Midterm exam	25%
Final exam	30%
Participation	5%

Undergraduate Grading Scale

The McMaster 12 Point Grading Scale

Grade	Equivalent Grade Point	Equivalent Percentages
A+	12	90-100
A	11	85-89
A-	10	80-84
B+	9	77-79
B	8	73-76
B-	7	70-72
C+	6	67-69
C	5	63-66

Grade	Equivalent Grade Point	Equivalent Percentages
C-	4	60-62
D+	3	57-59
D	2	53-56
D-	1	50-52
F	0	0-49

Late Assignments

• A 25% penalty will be assessed to all late assignments.

Absences, Missed Work, Illness

McMaster Student Absence Form (MSAF): In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “Requests for Relief for Missed Academic Term Work”.

The McMaster Student Absence Form is a self-reporting tool for Undergraduate Students to report absences that last up to 5 days and provides the ability to request accommodation for any missed academic work. Please note, this tool cannot be used during any final examination period. You may submit a maximum of 1 Academic Work Missed requests per term. It is your responsibility to follow up with your Instructor immediately regarding the nature of the accommodation. If you are absent more than 5 days or exceed 1 request per term you must visit your Associate Dean's Office (Faculty Office). You may be required to provide supporting documentation. This form should be filled out immediately when you are about to return to class after your absence.

Generative AI: Some Use Permitted

Students may use generative AI in this course in accordance with the guidelines outlined for each assessment, and so long as the use of generative AI is referenced and cited following citation instructions given in the syllabus. Use of generative AI outside assessment guidelines or without citation will constitute academic dishonesty. It is the student’s responsibility to be clear on the limitations

for use for each assessment and to be clear on the expectations for citation and reference and to do so appropriately.

APPROVED ADVISORY STATEMENTS

Academic Integrity

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy.

The following illustrates only three forms of academic dishonesty:

- plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

Authenticity / Plagiarism

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. Avenue to Learn, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. **All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

Courses with an On-line Element

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn, LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

Online Proctoring

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

Conduct Expectations

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the Code of Student Rights & Responsibilities (the "Code"). All students share the responsibility

of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online.**

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

Academic Accommodation of Students with Disabilities

Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University's Academic Accommodation of Students with Disabilities policy.

Requests for Relief for Missed Academic Term Work

In the event of an absence for medical or other reasons, students should review and follow the Policy on Requests for Relief for Missed Academic Term Work.

Academic Accommodation for Religious, Indigenous, or Spiritual Observances (RISO)

Students requiring academic accommodation based on religious, Indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students should submit their request to their Faculty Office ***normally within 10 working days*** of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students

should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

Copyright and Recording

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

Extreme Circumstances

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, Avenue to Learn and/or McMaster email.