Civil Engineering
CIVENG 3K03
Introduction to Transportation Engineering
Fall 2025

Instructor Information

Dr. Saiedeh Razavi
Email: razavi@mcmaster.ca
Office Hours:

A. 11:00-12:00 (Instructor's office)

Email only during the work hours of weekdays

Class Times

Lecture/Tutorials	Date/time	Effective
CIVENG 3K03-C01 -	MoTh 1:30PM - 2:20PM	Sep 2, 2025- 04-Dec-25
CIVENG 3K03-T01 -	Mo 4:30PM - 6:20PM	Sep 2, 2025- 04-Dec-25
CIVENG 3K03-T02 -	Th 2:30PM - 4:20PM	Sep 2, 2025- 04-Dec-25

Class Format

In Person Attendance is Required for This Course.

Course Dates: 09/02/2025 - 12/04/2025
Units: 3.00
Course Delivery Mode: In Person
Course Description: A transportation impact study serves as the focus for group projects, and provides the context for application of material on traffic flow characteristics, capacity and control for signalized and unsignalized intersections, and travel demand forecasting. Safety; social impacts. Two lectures, one tutorial (two hours); first term
Prerequisite(s): Registration in Level III or above of any Engineering program

Instructor-Specific Course Information

- Attending lectures and tutorials is mandatory. Our goal is to provide an environment that is free of discrimination and harassment, as well as that supports you to become competent in transportation engineering.
- All formal communications regarding this course will be through Avenue to Learn (A2L).
- In addition to using A2L as our Learning Management System, we will be using **Top Hat (https://tophat.com)** for class participation. Top Hat is an educational platform that integrates interactive features into learning materials, enhancing class engagement and comprehension.
- To enrol correctly into your course on Top Hat, you **must click the Top Hat Link** in your course page in A2L and then enroll (otherwise, you will not be automatically enrolled in the course). You will have the option to either create a student account or log in to an existing Top Hat account. If you are signing up for Top Hat for the first time, please u**se your official** school email address **and use a web browser to complete the process.**
- This course has a group project. **Project groups are self-selecting and self-governing.** Teams are expected to prepare and submit a “Group Contract,” for which a sample is provided on A2L. Those not joining any group by the deadline must complete the project individually.
- Periodically, you will be asked to provide feedback on your experience during this course, including your opinion on the effectiveness of the lectures, tutorials, and assignments in contributing to your learning. This feedback will be solicited to help

improve your experience, so it is in your best interest to make this feedback as informative, constructive, and respectful as possible.

Meeting Details

Please meet with the instructor and the TAs during their **office hours**.

If you need to meet them outside of their scheduled office hours, please **reach out during regular working hours on weekdays**. Use your McMaster email account or Avenue to Learn for all communications. Be sure to i**nclude the course number at the beginning of the email subject line**, as emails without it may receive lower priority

Important Links

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

McMaster University's writing support: https://studentsuccess.mcmaster.ca/writing-and-academic-skills/appointments/

Land Acknowledgement: We recognize and acknowledge that students of McMaster University meet and learn on the traditional territories of the Mississauga and Haudenosaunee nations, and within the lands protected by the "Dish With One Spoon" wampum, an agreement to peaceably share and care for the resources around the Great Lakes.

Please find more information at the following links:

https://libguides.mcmaster.ca/welcome-to-mcmaster

https://indigservices.mcmaster.ca

Course Learning Outcomes

- Students will be able to synthesize knowledge and data to select and apply appropriate models, methods, and tools for solving basic transportation engineering problems and providing informed insights to decision-makers (CEAB 3.2).

- Through participation in the term project, students will develop the ability to review, reflect on, justify, and critically assess existing transportation project reports, considering limitations, assumptions, constraints, and gaps in the studies (CEAB 4.4).

- Through participation in interactive lecture quizzes and questions, students demonstrate comprehension of both technical and non-technical instructions and questions (CEAB 7.1).

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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. The following Graduate Attribute indicators are

associated with this course and its learning outcomes as indicated in the previous section.

- CEAB 3.2: Synthesizes the results of an investigation to reach valid conclusions (1st learning outcome);
- CEAB 4.4: Justifies and reflects on design decisions, giving consideration to limitations, assumptions, constraints and other relevant factors (2nd learning outcome);
- CEAB 7.1: Demonstrates comprehension of technical and non-technical instructions and questions (3rd learning outcome);
- CEAB 7.3 Composes and delivers an effective oral presentation for the intended audience (4th learning outcome).

Course Schedule

This course provides an introduction to the fundamentals of transportation systems and the application of engineering and mathematical principles to analyze and solve transportation challenges. Topics include transportation system priorities, functional and contextual classifications, traffic flow theory, level of service, queuing theory, signalized intersection design, travel demand modeling, and the economic and environmental evaluation of transportation projects. Emphasis is placed on safe and efficient mobility and understanding methods for monitoring and measuring traffic conditions.

1. Introduction to the Course
2. Introduction to Transportation Engineering and its Priorities
3. Contextual and Functional Classifications in Transportation
4. Designing for Safe Mobility
5. Traffic Flow Theory
6. Monitoring and Measuring Traffic Conditions
7. Level of Service
8. Queuing Theory

9. Fundamentals of Signalized Intersections
10. Pre-timed Signalized Intersection Design
11. Travel Demand Modeling
12. Term Project Presentations

Required Materials and Texts

Please sign in with your MacID here to view your booklist

Canadian Capacity Guide for Signalized Intersections
Authors: Teply, S., Allingham, D.I., Richardson, D.B., Stephenson B.W.
Publication Date: 2008
Edition: 3rd
Available for free at: http://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/report-capacityguide.pdf

Optional Course Materials

Please sign in with your MacID here to view your booklist

Introduction to Transportation Engineering
Authors: Kimberley Mastako
Publisher: Top Hat
Available through the course page on Top Hat

Course Evaluation

Course Evaluation Component	Weight
Class Participation and Quizzes	14%

Course Evaluation Component	Weight
Assignments	16%
Term Project	20%
Midterm 1	25%
Midterm 2	25%
Short Bio (bonus mark)	1% (Bonus)

Course Evaluation Details

Class participation and quizzes will be administered and evaluated using the Top Hat Platform, which will be accessible for free via the Top Hat Link on the A2L course page.

This course does not have a final exam.

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

Graduate Grading Scale

Graduate Student Grading Scale (Except for MBA and Master of Finance)

Grade	Points	Equivalent Percentage	Pass/Fail
A+	12	90-100	P+
A	11	85-89	
A-	10	80-84	
B+	9	77-79	P
B	8	73-76	
B-	7	70-72	
F	0	69 and under	F

MBA and Master of Finance Grading Scale

Grade	Points	Equivalent Percentage	Pass/Fail
A+	12	90-100	P+
A	11	85-89	
A-	10	80-84	
B+	9	75-79	P
B	8	70-74	
B-	7	60-69	
F	0	59 and under	F

Late Assignments

Late assignments will not be accepted, as the solutions will be posted on A2L shortly after the deadline.

Absences, Missed Work, Illness

Following the MSAF policy, the MSAF accommodation for this course will be to reallocate the weight of missed items at the discretion of the instructor and in consultation with the undergraduate advisor.

Students who **miss Midterms (25%)** due to unforeseen circumstances may be eligible for a **rewrite**. To qualify for such accommodations, students must report to their Faculty/Program Officer to discuss their situation. They may be required to provide appropriate supporting documentation (See the documentation requirements in the Policy on Requests for Relief for Missed Academic Term Work). If warranted, the

Faculty/Program Office will approve the absence, and the instructor will determine appropriate relief.

Course Modification

The instructor reserves the right to change the dates and deadlines for any elements of the course. Changes will be communicated through regular communication channels, such as in-class announcements and notifications on A2L.

Generative AI: Some Use Permitted

Students may use generative AI for editing/translating/outlining/brainstorming/revising/etc. their work throughout the course so long as the use of generative AI is referenced and/or acknowledged in their submitted work. Use of generative AI outside the stated use of [editing/translating/outlining/brainstorming/revising/etc.] without citation or acknowledgement will constitute academic dishonesty. It is the student's responsibility to be clear on the limitations for use 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, located at https://secretariat.mcmaster.ca/university-policies-proceduresguidelines/

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.

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.

Equity, Diversity, and Inclusion

The Faculty of Engineering is committed to creating an environment in which students of all genders, cultures, ethnicities, races, sexual orientations, abilities, and socioeconomic backgrounds have equal access to education and are welcomed and treated fairly. If you have any concerns regarding inclusion in our Faculty, in particular if you or one of your peers is experiencing harassment or discrimination, you are encouraged to contact the Chair, Associate Undergraduate Chair, Academic Advisor or to contact the Equity and Inclusion Office.

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.

Academic Advising

For any academic inquires please reach out to the Office of the Associate Dean (Academic) in Engineering located in JHE-Hatch 301.

Details on academic supports and contact information are available from:

https://www.eng.mcmaster.ca/programs/academic-advising

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.

Turnitin.com

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. A2L, 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.