

CEE 4803E Syllabus

Transportation Simulation and Impact Assessment, Section E, 3 Credits

Fall 2026

Instructor Information

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General Course Information

Description

Enable the student to simulate various transportation modes, control technologies, and user behaviors, and to evaluate operational and environmental performance measures, on real-world transportation facilities.

Course Learning Outcomes

Outcome 1: Understand transportation simulation and operations sufficient for model development.

Outcome 2: Understand simulation techniques.

Outcome 3: Apply simulation via labs and project.

Outcome 4: Demonstrate problem solving.

Outcome 5: Prepare written/oral project work.

Required Course Materials

National Academies of Sciences, Engineering, and Medicine. 2015. Signal Timing Manual - Second Edition. Washington, DC: The National Academies Press.
<https://www.nationalacademies.org/publications/22097>

U.S. Department of Transportation, Federal Highway Administration. *Manual on Uniform Traffic Control Devices for Streets and Highways, 11th Edition*. December 2023 (with Rev. 1, Dec 2025). (https://mutcd.fhwa.dot.gov/kno_11th_Editionr1.htm)

Course Website: <https://canvas.gatech.edu/>

Grading Policy:

Criteria	Weight
Average of Class and Lab Assignments	55%
Project	35%
Attendance	10%
Total	100%

Grading Scheme:

- A - 89.5 - 100.0
- B - 79.5 - 89.4
- C - 69.5 - 79.4
- D - 59.5 - 69.4
- E - 59.4 or lower

Description of Graded Components

Labs and Homework:

Lab and homework will be assigned throughout the semester and are an essential part of understanding the course material. Many assignments will build upon previous assignments as the course progresses. It is critical that students keep up with the class material and assignments. Assignments are **due by the beginning of class or lab, unless specific arrangements are made with Dr. Hunter or Dr. Guensler prior to the deadline. Late assignments will be penalized 20% for each day late.**

When working on assignments, you may work with other students in the class unless otherwise stated in the assignment. However, you must turn in separate completed assignments with your name *and append the names of everyone you collaborated with on the assignment.* You are also allowed (and encouraged) to ask Dr. Hunter and Dr. Guensler questions, although you should try to think about the problems before asking.

All assignments should be professional in appearance. This means any handwritten portions must be legible, legal pad or notebook paper should not be used, names of all team members, your section number, and the submission date must be clearly written on each page, homework answers should be circled or boxed, all labs must have a cover

letter (this is not required for homework), etc. All submitted files must follow the following naming convention, make sure the file name includes the underscores as noted:

LASTNAME_FIRSTNAME_ASSIGNMENT_DATE_SUBMITTED.

Assignments not meeting these standards will be docked half the value of the assignment (i.e., 50-points from a 100-point assignment). Where possible assignments are preferred to be submitted in Word. **All assignments must be submitted online unless otherwise noted.**

Project:

The course will include a simulation project. This project will model a real-world corridor, applying the knowledge and skills you gained throughout the course. Final submission will include the developed model, model development report, findings report, and final presentation.

Course Policies

Attendance and/or Participation

Lecture Attendance:

Class attendance and participation are key to the learning process. New concepts and material will be introduced in class. Sample problems will be completed and explained. Context will be provided that is not found in written material. Lecture attendance will be taken intermittently and count toward your final attendance grade.

Lab Attendance:

Lab attendance and participation are required. Several of the graded items and the project involve working with other students. You are expected to participate fully. Lab attendance will be taken at each lab session and count toward your attendance grade.

Illness:

Lecture and lab require in-person attendance. Nearly all labs, and a number of class instruction meetings, require the use of licensed software on the classroom computers. However, we ask that you always prioritize your health and that of your classmates. If you are sick, or not feeling well, please do not come to class or lab. Reach out to Dr. Hunter and Dr. Guensler and let them know you will not be able to attend in-person. We will find a way for you to make up the missed session.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review [Georgia Tech's Honor Code](#) and the student [Code of Conduct](#).

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, [contact the Office of Disability Services](#) (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. [The Student-Faculty Expectations](#) articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Use of Generative AI

You may use generative AI programs, e.g. Microsoft CoPilot, ChatGPT, etc., when completing your labs and homework. However, all material submitted must be your ideas and intellectual contribution.

You should be aware that the material generated by these programs may be inaccurate, incomplete, biased, or otherwise problematic. I have tested several of these tools on samples of your homework problems; they made mistakes. Also, the use of these tools may stifle your own independent thinking and learning process. When working with generative AI, solve problems and work out methods on your own first. Short circuiting the process of working through the problems will hamper your ability to learn and understand the material. There is no shortcut to gaining an understanding of a topic, put in the time to solve the problems!

In addition, generative AI often does not appropriately cite its sources. Use of AI is not an excuse for plagiarism. Per GaTech's Honor Code, you may not submit any work generated by an AI program as your own. AI source material should be cited as any other reference. You are responsible for the correctness of any AI material. When/if you use AI platforms in your assignments, please write a note to clarify where in your process you used AI, include the prompt(s) as necessary used to generate the material, and which platform(s) you used. Again, you are responsible for any submissions – stating that ChatGPT made an error or committed plagiarism is not an acceptable excuse.

Lab Policy

Always wear an orange safety vest when conducting a field lab. Professionalism is expected in lab and in the field. Lab reports will be collected and graded. Late lab reports will not be accepted.

You must agree to abide by all safety rules. Failure to follow all safety procedures and instructions will result in an immediate failure of the course.

Campus Resources for Students

Undergraduate Student Academic Success Resources:

Academic Support: Academic Success and Advising (a unit in the Office of Undergraduate Education & Student Success) provides free support for your courses. Students can attend scheduled supplemental review (PLUS) sessions, stop by Drop-In Tutoring, or schedule a one-on-one appointment through Knack. To explore what options work best for you, please visit us online at success.gatech.edu/tutoring, email us at tutoring@gatech.edu, or come see us at Clough Undergraduate Learning Commons, Suite 283.

Student Well-Being:

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A [comprehensive list](#) of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being ([student-resource-guide \(gatech.edu\)](#))