

ISyE 7203 Syllabus

Logistics Systems Engineering, three credits

Fall 2026

Instructor Information

Instructor: Alejandro Toriello

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General Course Information

Description

The course is intended to introduce graduate students, and specifically IE and OR PhD students, to modeling and analysis in logistics and transportation, focusing primarily on problems from routing, network flow and network design. The course also surveys a variety of methodologies typically used to analyze these models. **This is a PhD-level course**, and most of the work involves rigorous, proof-based modeling and analysis. If you are not an ISyE PhD student, please consult with me to ensure you have the right background.

Course Learning Outcomes

- Modeling logistics problems using operations research tools.
- Understand what types of logistics problems that are theoretically easier or more difficult to optimize.
- Learn methods to bound and benchmark these problems.
- Learn exact and heuristic methods to solve the problems.

Required Course Materials

There is no required textbook; we will cover necessary material in class. You will need access to academic journals via the Georgia Tech library. Some useful optional references:

- *Network Flows*, by Ahuja, Magnanti and Orlin, Prentice Hall 1993.

- *The Logic of Logistics*, by Simchi-Levi, Chen and Bramel, second edition, Springer 2005.
- *Introduction to Logistics Systems Planning and Control*, by Ghiani, Laporte and Musmanno, Wiley-Interscience 2004.

Pre-Requisites

- ISyE 6661: absolutely essential
- ISyE 6662, ISyE 6761: strongly encouraged

Grading Policy and Description:

Homework (3 × 15% each) There will be three homework assignments. You may consult classmates and other sources (including AI tools) while working out problems, but must write assignments out on your own, in your own language. You must submit your assignments in **handwritten, hard copy** on letter-sized pages.

Test (30%) There will be a midterm exam, given during class. You may refer to your notes during the test. No other reference material, online or AI source is allowed.

Presentation (25%) There will be oral final presentations, given by either individual students or pairs, depending on class size. Each presentation will cover a research paper relevant to class material previously approved by me. The presentations will each last 30 minutes (roughly 25 minutes of presentation and five for questions). They are intended to be conference-style research presentations in which students present a motivation, problem, model, methodology and results. The presentation will include slides prepared with PowerPoint, Beamer, or any presentation software. I strongly encourage you to limit the number of content slides in your presentation (excluding cover slide, outline, etc.) to no more than twelve. You may use AI for stylistic aspects of the presentation, but the content should be your own. Presentations will be graded on two main criteria: (1) Does the presenter(s) understand the paper's results? (2) Does the presenter(s) and presentation communicate clearly and succinctly?

Grading Scale

Your letter grade will be assigned based on the following rubric:

A: [90%, 100%]

B: [80%, 90%)

C: [70%, 80%)

D: [60%, 70%)

F: below

At my discretion, this rubric may be adjusted, but only down (in your favor).

Course Policies

Attendance and/or Participation

Attendance is not mandatory except for the test and all student presentations.

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 an 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.