Course Syllabus (Summer 2026)
ISYE 3103 - Supply Chain Modeling: Logistics

General Information

Instructor:	Minda Zhao
	Email: mindazhao@gatech.edu
	Office Hours: TBA
Teaching Assistant:	Berkay Becu
	Email: bbecu3@gatech.edu
	Office Hours: TBA
Classroom:	Klaus Advanced Computing, Room 1207 for **RES**
	Zoom (Link Posted on Canvas) for **ASY**
Class Times:	Monday, Wednesday 3:30-4:45 PM

Course Description

This course focuses on engineering design concepts and optimization models for logistics decision making in three modules: supply chain design, supply chain planning and execution, and transportation.

Prerequisites

The official prerequisites are ISYE 3030 (Basic Statistical Methods) and ISYE 3133 (Engineering Optimization). Students should also be familiar with material covered in the prerequisites of both courses, including calculus at the level of MATH 1501 and programming at the level of CS 1301.

Course Objectives

The primary objective of this course is to introduce undergraduate students to fundamental models and solution methodologies for the design, management, and operation of logistics systems. By the end of the course, students will be able to

- Develop mathematical models to analyze real-world logistics challenges
- Become familiar with a variety of algorithms for problems in logistics engineering
- Interpret outputs to mathematical models in logistics and discuss their practical implications

A brief summary of course topics is listed below (with approximate number of classes in parentheses).

1. **Inventory Management** (8 classes)
    - Economic Order Quantity (EOQ) model

- Newsvendor models
- (Q, R) and (S, s) policies

2. **Transportation and Logistics** (10 classes)
    - Network flows: assignment, transportation, transshipment, and max flow problems
    - Shortest path problems and dynamic programming
    - Traveling Salesperson Problem (TSP), Vehicle Routing Problem (VRP), and their variants

Additional topics may be covered as time permits.

Textbooks and Course Materials

The instructor's handwritten lecture notes and/or slides will be posted on Canvas after each class period. Supplementary notes and required readings will also be posted on Canvas. There is no required textbook for the course. However, students may find the following texts useful for additional examples and further study:

- *Supply Chain Management: Strategy, Planning, and Operation* by Chopra and Meindl
- *Introduction to Logistics Systems Planning and Control* by Ghiani, Laporte, and Musmanno
- *The Logic of Logistics* by Simchi-Levi, Chen, and Bramel
- *Fundamentals of Supply Chain Theory* by Snyder and Shen

Exams

There will be one midterm and one final exam. All exams will be held online. No makeup exams will be given. Missing an exam will be accommodated only in case of Institute-approved absences with a letter from the Dean of Students.

Homework

There will be approximately **5 homework assignments** throughout the semester. Students are encouraged to discuss assignments with each other but must write code and solutions individually. Copying others' work is NOT acceptable and violates the honor code. Students should note on assignments which problems were collaborated and with whom.

All assignments will be submitted on Canvas. Late submissions will not be accepted, but the lowest homework grade will be dropped. It is the student's responsibility to ensure that submissions are legible; answers that are not legible will be marked incorrect.

Homework assignments may include programming tasks. Students are required to upload their code as part of their Canvas submission. It is up to the student to decide which programming language to use (as long as their code is readable and well-commented). The instructor's posted homework solutions will be written in Python.

Students must provide a complete list of all references used to solve problems. While they may use ChatGPT to identify relevant references, it is their responsibility to ensure the credibility of these sources. Note that

citing ChatGPT directly is prohibited, and presenting a fabricated source is strictly unacceptable as it violates academic integrity.

Course Communication

All e-mails sent to the instructor or teaching assistant should include [ISYE 3103] in the subject line. All course announcements will be posted on Canvas.

Grading

Grades are weighted as follows.

- Homework: 30%
- Midterm: 30%
- Final Exam: 40%

All grades will be posted on Canvas.

The final examination will be comprehensive and based on the cumulative material for the semester. If a student has completed all work (homework and midterm) for the course and received a passing grade on each (50% and above), the final course grade will be determined by the maximum of the grade calculated by the above formula and the final examination grade.
Your final grade will be assigned as a letter grade according to the following scale:

$$\begin{aligned} 90 &\leq \text{A} \\ 80 \leq \text{B} &< 90 \\ 70 \leq \text{C} &< 80 \\ 60 \leq \text{D} &< 70 \\ F &< 60 \end{aligned}$$

See http://registrar.gatech.edu/info/grading-system for more information about the grading system at Georgia Tech.

Student Conduct and Academic Integrity

All students are required to abide by the Georgia Tech Academic Honor Code (https://policylibrary.gatech.edu/student-affairs/academic-honor-code) and the Student-Faculty Expectations Agreement (https://catalog.gatech.edu/rules/22). In particular, any evidence of plagiarism, cheating, or unauthorized collaboration will be reported to the Office of Student Integrity.

Accommodation Requests

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. I would be happy to discuss your learning needs one-on-one, so contact me if you would like an appointment.