

4. Have the ability to conduct preliminary research in the field of transport and logistics operations, and solve real-world problems through collaborative discussion, critical thinking and independent execution.

POLICIES & PROCEDURES



Academic Integrity: It is expected that NJIT's University Code on Academic Integrity will be followed in all matters related to this course. Refer to NJIT's Dean of Students website to become familiar with the Code on Academic Integrity and how to avoid Code violations.

<https://www.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf> **Communication:**

The preferred mode of communication between the students and the instructor outside of class is e-mail. Nevertheless, students can contact the instructor by phone with course-related questions, or schedule virtual consultations via WebEx/Zoom/Teams. The instructor can be contacted through Canvas as well.

Lectures/Class:

- The attendance will be taken at each lecture/class.
- Each student may be excused to miss up to three classes with prior permission/VALID reason.
- Each subsequent class absence will be reported to the Dean of Students and may affect student's standing and grade.
- Five (5) or more missed classes may result in an F grade.
- Active in-class participation may be awarded by bonus points.

 <h3>Requests for Absence Verification</h3> <p>Students can request an absence excusal through the DOS online for the following reasons: bereavement, medical, military activity, legal obligations, and university-sponsored events.</p> <ul style="list-style-type: none">• 14-day window with verifiable documentation• ServiceNow (IST) notice to instructors• Not for trips, weddings, graduations, work, traffic, or non-NJIT activities.• Instructor discretion or based on your department policy.• Policy on Excused Absences for Religious Observances	 <h3>Requests for Incomplete Grades</h3> <p>Students can request consideration for an incomplete grade online through the DOS. Verifiable documentation in support of a request is required for bereavement, medical, military activity, legal obligations, and university-sponsored events.</p> <ul style="list-style-type: none">• Requests must be submitted before final grades are posted.• Requests due to repeated and unexcused absences, lack of engagement, or unsatisfactory and failing grades will not be reviewed.• ServiceNow (IST) notice to instructors• Instructor discretion or based on your department policy.• Dr. Ziavras/Graduate Studies will be copied for all PhD students.
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Withdrawals:

To ensure consistency and fairness in application of the NJIT policy on withdrawals, student requests for withdrawals after the deadline will not be permitted unless extenuating circumstances (e.g., major family emergency or substantial medical difficulty) are documented. The course Professor and the Dean of Students are the principal points of contact for students considering withdrawals.

Lecture Notes and Materials:

The lecture notes will be posted in Canvas prior to each lecture. Other course materials may be posted on Canvas after the class (e.g., in-class exercises and homework solutions).

Homework:

Homework assignments will be assigned to reinforce course learning objectives. There will be approximately 3 to 4 homework assignments during the semester. The homework assignments will be posted in Canvas. Collaborating, sharing, and/or copying of exam/homework is **NOT** allowed. Credit will not be given to individuals who either initiate, allow, or participate in such behaviors. The NJIT honor code will be upheld at all times and any violation will be brought to the immediate attention of the Dean of Students.

Homework Format:

Homework assignments will be provided electronically in Canvas as PDF documents. The submission of the homework assignments will also be through Canvas. Students must submit their homework assignments in a single PDF document. It can be a scanned copy of the hand-written assignment, or an electronic document converted to PDF format. In case there is an issue with Canvas, the student may submit the homework by sending an email to the TA and copy the instructor before the deadline.

Late Homework:

The assignments must be turned in by the due date specified by the instructor. Late homework will lose 50% points unless there is a VALID reason verified by DOS. Homework submitted after solutions have been reviewed or posted will not be accepted.

Course Project:

The course project will require students to explore transportation system analysis, management, and operation problems using the modeling techniques learnt in class. The project should be documented into a report. The submitted report needs to be on letter paper, with 12-pt font size for the main contents, a single space between lines, and in PDF format.

The students must also present their final project for 15-20 minutes. The instructors and other students will ask related questions during/after each presentation. The instructor will judge based on the quality of technical reports and also the presentation in making grading decisions.

Calculation of Course Grade: A weighted average grade will be calculated as follows:

Homework	45%
Class participation	20%
Project report	15%
Final project presentation	20%

The minimum requirements for final letter grades are as follows:

A = 85-100%, B = 80-84%, C = 70-79%, D = 60-69%, F < 60%

Instructor Commitment: You can expect the instructor to be courteous, punctual, organized, and prepared for lecture and other class activities; to answer questions clearly; to be available during office hours or to notify you beforehand if office hours are moved; to provide a suitable guest lecturer or pre-recorded lecture when they are traveling or unavailable; and to grade uniformly and consistently.

AI Statement: Students are permitted to use AI tools (such as Grammarly, ChatGPT, etc.) to assist with refining the language, grammar, and clarity of their writing. This includes editing for tone, structure, or readability. However, AI tools may not be used to generate original content for project reports, assignments, or any graded work. The core ideas, analysis, and written content must be the student's own work. Submissions that rely heavily on AI-generated content without proper authorship may be considered a violation of academic integrity. If students use AI for any course-related work, they must cite it according to the guidelines provided on the [NJIT Library AI Citation page](#). If you have any questions about AI use in this course, please contact the course instructor before submitting any assignments.

Students with Documented Disabilities: NJIT is committed to providing students with documented disabilities equal access to programs and activities. If you have, or believe that you may have, a physical, medical, psychological, or learning disability that may require accommodations, please contact the Coordinator of Student Disability Services located in the Center for Counseling and Psychological Services, in Campbell Hall, Room 205, (973) 5963414. Further information on disability services related to the self-identification, documentation and accommodation processes can be found on the webpage at: <http://www.njit.edu/counseling/services/disabilities.php>

Other Class Policies:

Cell phones shall be turned off or silenced prior to coming to class. Texting and the use of mobile devices (e.g., Laptop, iPad/Tablet PC, iPod, etc.) during the class shall not be allowed.

Course Schedule:

Week	Date	Topic/Assignment
1	09/02	- Course Overview - Introduction and Fundamentals of Network Modeling
2	09/09	- User Equilibrium: Concepts and Formulations
3	09/16	- User Equilibrium: Solution Algorithms
4	09/23	- System Optimum and Congestion Pricing - Assignment 1 Due
5	09/30	- Advanced Equilibrium Analysis (Elastic Demand, Stochastic UE, Bi-level Programming, Mechanism Design, etc.)
6	10/07	- Logistics Network Problems, One-To-One and One-To-Many Distribution System, TSP, and VRP
7	10/14	- Logistics Network Problems: Facility Location Models - Assignment 2 Due

8	10/21	- Solution Algorithms I (Exact, Meta Heuristics, Continuous Approximation Methods)
9	10/28	- Solution Algorithms II (Flip Classroom)
10	11/04	- State of the art paper review 1
11	11/11	- Transportation Infrastructure Network Models I (Asset Management Methodology)
12	11/18	- Transportation Infrastructure Network Models II (Applications and Case Study)
13	11/25	- Thanksgiving Holiday (No Class) - Assignment 3 Due
14	12/02	- State of the art paper review 2; Academic Training
15	12/09	- Project Presentations

Course Objectives Matrix - CE 350 Transportation Engineering:

Strategies and Actions	Course Student Learning Outcomes	ABET Student Outcomes (1-7)	Program Educational Objectives	Assessment Methods/Metrics
Course Objective 1: Understand the basic concepts and principles in transportation network modeling;				
Explore a set of quantitative models for urban transportation network modeling and analysis	Demonstrate a good understanding of the basic concepts and principles in transportation network modeling;	2, 7	1, 2	Discussions and homework.
Have an overview of the basics of techniques for transportation system analysis		2, 7	1	Homework, project.
Learn how to interpret the results of these models and foster a critical perspective of their limitations.		2	1, 2	Group project.

Course Objective 2: Develop self-learning abilities to model and solve various transportation network problems.				
Engage in individual assignments, case studies, or projects that require students to define problems, select modeling methods, and implement solutions with minimal step-bystep instruction.	Demonstrate the ability to learn autonomously, adapt to new problems, and continuously improve their modeling skills in transportation systems.	2, 4	2, 3	Discussion, homework, project
Encourage formulation and solution of realworld network problems using theoretical knowledge.		2, 4	2, 3	Discussion, homework, project
Foster collaborative learning through peer presentations, feedback, and discussions to share self-learned insights and problem-solving techniques.		2	2, 3	Presentation, and homework, group project.
Course Objective 3: Learn and critically evaluate state-of-the-art techniques, models, and analytical tools in the field.				
Assign curated literature reviews or technology overviews to familiarize students with cutting-edge approaches.	Learn and critically evaluate state-of-the-art techniques, models, and analytical tools in the field	1, 2, 7	1, 2	Discussion, homework and project.
Engage students in evaluating the strengths, limitations, and applicability of models or techniques through comparative studies or case-based analysis.		1, 2, 7	1, 2	Discussion, homework and project.

Include assignments that require students to critique research papers or real-world applications based on performance, assumptions, or scalability.		1, 2, 7	1, 2	Homework, project.
Course Objective 4: Develop the ability to conduct preliminary research in the field of transportation and logistics operations.				
Guide students to identify current challenges or gaps in transportation and logistics through literature reviews or problem scans.	Identify and solve real world problems through collaborative discussion, critical thinking and independent execution within the context of data availability and limitations of analysis tools.	7	1, 2	Homework, graded group project.
Match up analysis tools, data sets and problems to solve.		2, 7	1, 2	Homework, laboratory exercises, group project.
Require students to write research proposals, project memos, or Mini papers summarizing objectives, methods, and preliminary findings.		2, 7	1, 2	Homework, group project, exams.

CEE Mission, Program Educational Objectives and Student Outcomes

The mission of the Department of Civil and Environmental Engineering is:

- to educate a diverse student body to be employed in the engineering profession
- to encourage research and scholarships among our faculty and students
- to promote service to the engineering profession and society

Program Educational Objectives

Our **Program Educational Objectives** are reflected in the achievements of our recent alumni:

1. **Engineering Practice:** Alumni will successfully engage in the ethical practice of civil engineering within industry, government, and private practice, working towards safe, practical, resilient and sustainable solutions in a wide array of technical specialties including construction, environmental, geotechnical, structural, transportation, and water resources.

2. **Professional Growth:** Alumni will advance their technical and interpersonal skills through professional growth and development activities such as graduate study in engineering, research and development, professional registration and continuing education; some graduates will transition into other professional fields such as academia, business, and law through further education.
3. **Service:** Alumni will perform service to society and the engineering profession through membership and participation in professional societies, government, educational institutions, civic organizations, charitable giving and other humanitarian endeavors.

Student Outcomes

Our **Student Outcomes** are what students are expected to know and be able to do by the time of their graduation:

1. an ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative environment, establish goals, plan tasks and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusion
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

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