CIVE 451-001/T580-001 Transportation System Planning
Department of Civil, Architectural & Environmental Engineering
College of Engineering

COURSE SYLLABUS

Term:	Winter 2026
Credit Hours:	3 credits
Class Meeting Days:	Monday, Wednesday
Class Meeting Time:	15:00 - 16:20pm
Class Meeting Location:	Alumni Engineering Labs 279
Required or Elective:	Elective

Instructor: Dr. Zhiwei Chen, Assistant Professor
Department of Civil, Architectural & Environmental Engineering
Drexel University
Office: AEL 273-F
Office hours: 1-3PM every Wednesday or by appointment
Email: zc392@drexel.edu

All contents (including the timeline) are subject to change during the term.

You can always reach me via email. If you want me to respond efficiently, please label your email title as follows: CIVE451: <Your Email Title>.

1. Course Description

The transportation sequence in Civil Engineering consists of three courses – Transportation Engineering, Transportation System Planning, and Traffic Singal Systems. Transportation System Planning is the second course in the sequence. This course introduces foundational concepts and methods for transportation planning. Topics that will be covered include transportation history, planning process and institutions, funding, travel demand modeling, planning data, and transportation equity. Emerging topics such as planning for autonomous vehicles will also be discussed if time permits.

2. Prerequisites

Required Transportation Engineering (or equivalent) with a minimum grade of a D or approved by the instructor.

3. Course Objectives

This class will help you with the transportation portion of the FE exam. By the end of this course, you will demonstrate the ability to:

- Describe the history of transportation system development in the United States.
- Explain the transportation planning process, institutions, and funding mechanism.
- Understand the fundamental concepts and methods for travel demand modeling.
- Collect and analyze data for transportation planning.
- Understand theories/methods to define and measure transportation equity.

4. Recommended Textbook

There are no required textbooks. Reading materials will be provided for each lecture.

5. Course Schedule

Week	Day	Topic	Deliverables
1	01/05/25	Module 1: Transportation History	
	01/07/25	Module 1: Planning Process, Institutions & Products	
2	01/12/24	No Class – TRB Annual Meeting	
	01/14/24	No Class – TRB Annual Meeting	HW1
3	01/19/24	No Class – MLK Day	
	01/21/24	Module 1: Transportation Funding	
4	01/26/24	Module 2: Trip Generation	**Exam 1**
	01/28/24	Module 2: Network Basics & Shortest Path	
5	02/02/24	Module 2: Trip Distribution	
	02/04/24	Module 2: Mode Choice	HW2
6	02/19/24	Module 2: Mode Choice	
	02/11/24	Module 2: Traffic Assignment 1	
7	02/16/24	Module 2: Traffic Assignment 2	
	02/18/24	Guest Lecture: Travel Demand Modeling in Practice	HW3
8	02/23/24	Module 3: Defining Trans. Equity 1	
	02/25/24	Module 3: Defining Trans. Equity 2	**Exam 2**
9	03/02/24	Module 3: Measuring Trans. Equity	
	03/04/24	Guest Lecture: Planning for Autonomous Vehicles	
10	03/09/24	Module 4: Planning Data 1	HW4
	03/11/24	Module 4: Planning Data 2	
11	TBD	NA	**Exam 3**

6. Academic Performance

The final grade will be determined with the following weights:

Criteria	Percent of total grade
Homework assignment (4)	60% (15% each)
Take-home exams (3)	40% (20% from each of the highest 2)
Total	100%

Grading Scale (%)	
98+	A+
93-97	A
90-92	A-
88-89	B+
83-87	B
80-82	B-
78-79	C+
73-77	C
70-72	C-
68-69	D+
60-67	D
59 or below	F

7. Course Specific Policies

Attendance policy: Attendance is encouraged to ensure your performance in this class.

Late policy: You have 5 slip days to use across the quarter. Slip days are counted in calendar days, and any submission after the deadline consumes at least one slip day; partial days round up to a full day. Slip days may not be used for exams, in-class activities, or the final project. After you've used all five slip days, late work will not be accepted unless you have prior, approved accommodations. For documented emergencies or approved accommodations, please contact me before the deadline whenever possible.

Questions about your grades: Assignments will be typically graded within one week after they are due. Any questions about your grades must be received by me within one week after you receive your grades. For example, if I tell you your grade on Assignment 1 on date X, and you want to talk to me about it, you should do it within X+7 (days).

Homework submission: All homework must be submitted by 11:59 pm on the due date as specified in the schedule. All submissions must be made on Learn in the form of a PDF. If you prefer to handwrite your solutions, you may scan and upload them as a PDF. However, make sure your handwriting is clear and legible to avoid potential deductions due to illegibility. ***Assignments submitted in other formats will NOT be graded.***

Homework resubmission: For Assignments 1-**3**, once you receive your graded assignment, you will have the chance to revise and resubmit it. This resubmission is allowed only once and **must be done within a week of receiving the graded assignment.** The resubmission will be assessed independently of the original, and **your final grade of that assignment would be 40%*original grade + 60%*resubmitted grade**. Resubmissions are only allowed if there is an original submission.

Teaching improvement: I would like to improve my teaching as much as possible. Therefore, I highly appreciate your comments and feedback regarding my teaching style or anything related to this class. You can freely tell me what you think about the class in any way you feel is the best: face-to-face conversations, emails, notes, etc. In addition to the Course Evaluation, informal surveys will be conducted by me for teaching improvement purposes.

8. Academic Policies

Students are responsible for being aware of all academic policies as posted on the provost's website and not just the ones listed below.

Academic Integrity, Plagiarism, Dishonesty and Cheating Policy:
https://drexel.edu/provost/policies-calendars/policies/academic-integrity/

Student with Disability Statement:
https://drexel.edu/disability-resources/support-accommodations/student-family-resources/

Student Responsibilities:
It is a student's responsibility to assure that she/he is properly enrolled or de-enrolled in the course.

Course Add/Drop Policy:
https://drexel.edu/provost/policies-calendars/policies/course-add-drop/

Course Withdrawal Policy:
https://drexel.edu/provost/policies-calendars/policies/course-withdrawal/

Financial Obligations:
Students who do not satisfy financial obligations to Drexel University cannot be entitled to a grade.

Course Change Policy:
From time to time, the instructor of this course reserves the right to change and amend this Syllabus on an as needed basis to reflect any changes or omissions to information, course materials, schedule, etc. throughout the duration of the semester. The instructors will inform their students when such changes have occurred and will assure the revisions are available to all students.