IZMIR INSTITUTE OF TECHNOLOGY
CIVIL ENGINEERING DEPARTMENT

CE 454 – TRAFFIC ENGINEERING
SYLLABUS
FALL 2024

Class Meeting Time: Fridays 9:45 – 12:30

Location: TBD

Instructors: Asst. Prof. Dr. Tolga ERCAN – Email: tolgaercan@iyte.edu.tr
Res. Asst. Duygu Şenol – Email: duygusenol@iyte.edu.tr

Office Hours: Only by appointment

Description: The purpose of the course is to introduce students to the field of Traffic Engineering, which covers the different components of traffic system, traffic-stream characteristics, traffic studies, data collection, and traffic control of urban streets and highways.

Textbook: Traffic Engineering by Roess, Prassas, and McShane. Pearson. Fourth Edition.

References:
2918 Sayili Karayollari Trafik Kanunu
Karayollari Trafik Yonetmeligi
Karayolu Trafik Isaretleme Standartlari
Highway Capacity Manual 6th and 7th Editions
Highway Safety Manual, 1st Edition, 2010, (including 2016 Errata)
Manual of Uniform Traffic Control Devices (MUTCD), 2009, https://mutcd.fhwa.dot.gov/

Learning Outcome:

- Fundamentals of traffic flow theory and stream characteristics
- Evaluate transportation alternatives
- Analyze traffic conditions at intersections and roadways
- Develop signal phasing and timing plans
- Learn the basics of traffic data collection techniques and analyses

Grading Policy:

- Class Project (Group Project): %20 of the final grade
    - Project details will be shared later in the class meetings.
- Midterm Exam: %30 of the final grade
- Final Exam: %50 of the final grade

Date	Week	Lecture Content
4/10/2024	Week 1	Introduction to Class & Introduction of Concepts
11/10/2024	Week 2	Components of the Traffic System and Roadway
18/10/2024	Week 3	Traffic Control Devices - Traffic Stream Characteristics
25/10/2024	Week 4	Traffic Flow Theory – Statistical Applications – Traffic Data Collection
1/11/2024	Week 5	Volume - Speed, Travel Time, and Delay Studies – Fundamentals & Concepts of Uninterrupted Flow Facilities
8/11/2024	Week 6	Basic Freeway Segments & Multilane Highways & Two-Lane Highways
15/11/2024	Week 7	Elements of Intersection Design and Layout – Fundamentals of Signalized Intersection Design
22/11/2024	**Week 8**	**Mid-Term Exam**
29/11/2024	Week 9	Fundamentals of Signal Timing and Design
6/12/2024	Week 10	Intelligent Transportation Systems
13/12/2024	Week 11	Traffic Impact Analysis
20/12/2024	Week 12	Traffic Safety Studies
27/12/2024	Week 13	Pedestrian, Cyclists Facilities – Parking Studies (if time allows)
3/1/2025	Week 14	Class Recap
6/1/2025 – 17/1/2025	Final Exams – TBD	