Izmir Institute of Technology

CE453 Highway, Railway, Port and Airport Design

2025-26 Fall Semester

Instructor: ***Volkan Emre UZ, PhD***
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Lecture Hours & Class Location**:** ***Wednesday 09:45– 12:15 CZ12***
Office Hours: ***By appointment***

Textbooks:

You can benefit any Highway Engineering book

Catalog Description:

Introduction to Highway Geometric Design Concept, Determining Terrain Conditions of your TOPOMAP & Selection of Highway Geometric Design Standards; Determining the Minimum Compass Length & Drawing of Zero Polygon; Route Location and Determining the Minimum Horizontal Curve Radius; Plan Drawing and Calculations&Drawings of Horizontal Curve and Superelevation Details; Drawing the Profile and the Grade Line, Vertical Curve Calculations; Drawing of Cross-Sections and Calculation of their Areas; Calculations of Earthwork Volume; Drawing Earthwork Distribution Diagrams.

Course Conduct:

Your project will be graded as your mid-term exam and* ***the final exam**** *will be taken at the end of the semester.*
**The exact dates of exams will be announced by faculty student relations later in the semester.*

Grade and Attendance Policy:

Effect of Mid-Term and Final exams on total success score will be 50% and 50%, respectively.

Tentative Course Outline:

Week #	Subject of Lecture	Submission due to	Points
1	Introduction		
2	Sharing the TOPOMAPS; Determining Terrain Conditions & Selection of Highway Geometric Design Standards	5th Week	20
3	Determining the Minimum Compass Length & Drawing Zero Polygon		
4	Route Location and Determining the Minimum Horizontal Curve Radius		
5	Plan view drawings and Calculations&Drawings of Horizontal Curve and Superelevation Details	7th Week	20
6	Plan view drawings and Calculations&Drawings of Horizontal Curve and Superelevation Details		
7	Drawing the Profile and the Grade Line	10th Week	20
8	Drawing the Profile and the Grade Line		
9	Vertical Curve Calculations		
10	Drawing of Cross-Sections and Calculation of their Areas	12th Week	20
11	Drawing of Cross-Sections and Calculation of their Areas		
12	Calculation of Earthwork Volumes	14th Week	20
13	Drawing Earthwork Distribution Diagrams		
14	Closure Lecture		