



**HASAN KALYONCU UNIVERSITY**  
**Faculty of Engineering**  
**Course Description Form**

<b>COURSE:</b> Highway Engineering					
<b>CODE:</b> CE381		<b>SEMESTER:</b> FALL			
<b>LANGUAGE:</b> ENGLISH		<b>TYPE:</b> COMPULSORY			
<b>PRE-REQUISITES: -</b>		<b>THEORY</b>	<b>PRACTICAL</b>	<b>CREDIT</b>	<b>ECTS</b>
<b>CO-REQUISITES: -</b>					
<b>WEEKLY HOURS: 4</b>		2	2	3	5

**CONTENT OF THE COURSE:**

Introduction and basic concepts. Characteristics of road users. Stopping-Visibility distance. Vehicle movements. Overtaking distance and duration. Characteristics of highway traffic. Capacity of roads. Service Level of roads. Geometric properties of the road and selection of standards. Route research. Horizontal curves. Superelevation. Transition curves. Longitudinal section. Vertical curves.

**OBJECTIVE OF THE COURSE:**

Giving the basic design and projecting information about highway engineering and to enable the students to plan and design all components of the highways in terms of traffic safety and economic aspects, to meet the traffic loads and fulfill the intended functions and conditions.

**WEEKLY SCHEDULE AND PRE-STUDY PAGES**

<b>Week</b>	<b>Topics</b>
1	Introduction and Basic Concepts
2	Characteristics of road users
3	Vehicle characteristics and movements.
4	Characteristics of highway traffic.
5	Capacity of roads
6	Geometric properties of the road
7	Route research
8	Midterm
9	Horizontal curves
10	Superelevation
11	Transition curves
12	Superelevation and Transition curves
13	Longitudinal section
14	Vertical curves

**TEXTBOOK:**

- *“Introduction to Highway Engineering (Unpublished Lecture notes), Dr. Mustafa Sinan Yardim, YTU, ISTANBUL, 2012.*
- *A Policy on Geometric Design of Highways and Streets, AASHTO, 2001.*
- *Highway Engineering, Nadir Yayla, ISTANBUL 2002.*

- *Highway Constructions Design and Application, İlhanSütaş, GüvenÖztaş, 1986*
- *Related research papers and web sites.*
- *A Policy on Geometric Design of Highways and Streets, AASHTO, 2001.*
- *Highway Capacity Manual (HCM 2000), Transportation Research Board, 2000.*
- *Highway Design and Traffic Safety Engineering Handbook, R. Lamm, B. Psarianos, T. Mailaender, McGraw-Hill, 1999.*

*Introduction to Transportation Engineering, James K. Banks, McGraw-Hill, 2002..*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
<b>LO1</b>	3	0	0	0	0	0	0	0	0	0	0
<b>LO2</b>	3	0	0	0	0	0	0	0	0	0	0
<b>LO3</b>	3	3	3	0	0	0	0	0	0	0	0
<b>LO4</b>	0	3	0	0	0	0	0	0	0	0	0
PO: Program Outcomes   LO: Learning Outcomes Values: 0: None   1: Low   2: Medium   3: High											

<b>INSTRUCTOR(S):</b>	Asst.Prof.Dr. D1a Eddin NASSANI
<b>FORM PREPARATION DATE:</b>	22.05.2019

#### **LEARNING OUTCOMES OF THE COURSE:**

- LO1:** To learn the design criteria for road construction.  
**LO2:** To learn the design standards required for road construction.  
**LO3:** Max. slope, project speed, project traffic, route research, zero polygon, horizontal and vertical curves, cross-section design criteria such as road construction using a road design.  
**LO4:** To reach the level that will construct or control the road construction

#### **CONTRIBUTION OF THE COURSE TO VOCATIONAL EDUCATION**

The student learns the design criteria that required for road construction with the information he/she has received in the course. Learns basic and auxiliary elements (road, pitchba, etc.) in road construction. Learns traffic capacity and service life and design of parking spaces.