

COURSE INFORMATION					
Course Title	Code	Semester	L+P+L Hour	Credits	ECTS
TRANSPORTATION SYSTEMS AND DESIGN	CE 361	5	3+0+0	3	6

Prerequisites	-
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Language of Instruction	English
Course Level	Bachelor's Degree (First Cycle Programmes)
Course Type	Compulsory
Course Coordinator	
Instructors	Dr. Taner Hergüner
Assistants	-
Goals	This course aims to teach the fundamentals and general concepts of transportation engineering focusing on design process.
Content	Transportation systems, fundamentals of highway and railway engineering, vehicle and road characteristics, drawing plan, profile and cross-section of a road, horizontal and vertical design of an highway.

Course Learning Outcomes	Program Learning Outcomes	Teaching Methods	Assessment Methods
1) Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied information in these areas to model and solve engineering problems.	1, 12	1,2	A,D
2) Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.	3, 4, 14	1,2	A,D
3) Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose	4	1,2,4	A,D
4) Ability to devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.	4	1,2	A
5) Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually.	14	1,2	A

6) Information about business life practices such as project management, risk management, and change management; awareness of entrepreneurship, innovation, and sustainable development.	5	1,2	A
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Teaching Methods:	1: Lecture, 2: Question-Answer, 3: Lab, 4: Case-study
Assessment Methods:	A: Testing, B: Experiment, C: Homework, D: Project

COURSE CONTENT

Week	Topics	Study Materials
1	Introduction to transportation system	Lecture Notes Textbook
2	General terms, concepts and definitions	Lecture Notes Textbook
3	General terms, concepts and definitions	Lecture Notes Textbook
4	The stages of highway design	Lecture Notes Textbook
5	The criteria for highway design	Lecture Notes Textbook
6	The criteria for highway design	Lecture Notes Textbook
7	The design of geometrical highway elements	Lecture Notes Textbook
8	The design of geometrical highway elements	Lecture Notes Textbook
9	Constructional techniques for highway	Lecture Notes Textbook
10	The design of highway safety elements	Lecture Notes Textbook
11	Midterm Exam, Junction design	Lecture Notes Textbook
12	Junction design	Lecture Notes Textbook
13	Project Exam	Lecture Notes Textbook
14	Final Exam	-

RECOMMENDED SOURCES

Lecture Notes	These are the notes that the students take during the lectures.
Textbook	Textbook prepared by A. Taner HERGÜNER (instructor)

MATERIAL SHARING

Documents	Supplementary problems are added to textbook.
Assignments	-

Exams	Exams and project papers are distributing to students after grading to discuss about mistakes.
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ASSESSMENT		
IN-TERM STUDIES	NUMBER	PERCENTAGE
Mid-terms	1	50
Quizzes	-	-
Assignment	-	-
Lab Work	-	-
Term Project	1	50
Total		100
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		50
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		50
Total		100

COURSE CATEGORY	Expertise/Field Courses
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COURSE'S CONTRIBUTION TO PROGRAM						
No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied information in these areas to model and solve engineering problems.					X
2	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.					X
3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.					X
4	Ability to devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.				X	
5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating engineering problems.					X
6	Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually.				X	
7	Ability to communicate effectively both orally and in writing; knowledge of a minimum of one foreign language.				X	
8	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.					

