

## GAU, Faculty of Engineering

<b>Course Unit Title</b>	Transportation Engineering	
<b>Course Unit Code</b>	CVEN305	
<b>Type of Course Unit</b>	Compulsory, All civil engineering students	
<b>Level of Course Unit</b>	3rd Year BSc	
<b>National Credits</b>	2	
<b>Number of ECTS Credits Allocated</b>	3 ECTS	
<b>Theoretical (hour/week)</b>	2	
<b>Practice (hour/week)</b>	-	
<b>Laboratory (hour/week)</b>	-	
<b>Year of Study</b>	3	
<b>Semester when the course unit is delivered</b>	5	
<b>Mode of Delivery</b>	Face to Face	
<b>Language of Instruction</b>	English	
<b>Prerequisites and co-requisites</b>	CVEN204	
<b>Recommended Optional Programme Components</b>	Basic background in surveying	
Objectives of the Course:		
This course is providing knowledge about the transportation planning systems, traffic engineering, geometric design and pavement design.		
<b>Learning Outcomes</b>		
When this course has been completed the student should be able to		Assesment.
1	Face with different transportation systems	1,2
2	Analysis of different paths and road design in terms of traffic parametes and road quality	1,2
3	design the path between to points	1,2
4	Design the diffrent pavement surface	1,2
Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work		
<b>Course's Contribution to Program</b>		
		CL
1	Ability to understand and apply knowledge of mathematics, science, and engineering	4
2	Ability to design and conduct experiments as well as to analyze and interpret data	1
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	1
4	Ability to apply systems thinking in problem solving and system design	3
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	1
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	5
7	Ability to express their ideas and findings, in written and oral form	1
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	3
9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner	4
10	Ability to manage time and resources effectively and efficiently while carrying out civil engineering projects	3
11	Ability to combine knowledge from different areas of civil engineering for problem solving and system design with an ethical and sustainable approach	3
CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)		

<b>Course Contents</b>			
Week			Exams
1	Chapter 1	Introduction to transportation engineering	
2		Transportation model analysis including trip generation and trip distribution	
3		Transportation model analysis including trip distribution and mode choice	
4	Chapter 2	Introduction to traffic engineering	
5		Traffic flow	
6	Chapter 4	Capacity and Level of Service LOS	Midterm
7	Chapter 5	Introduction to geometric design	
8		Design controls: speed, volume and access	
9		Design controls: vehicles and drivers and SSD design	
10		Vertical alignment	
11	Chapter 5	Horizontal alignment	
		Explanation about different types of pavements	
12		Pavement analysis	
13		Flexible pavement design	
14		<b>Debugging the course</b>	Final
References:			
Textbooks: 1. Highway Engineering by Martin Rogers. Principles of Highway Engineering and Traffic Analysis by Fred L. Mannering Highway Engineering Teknik Bilimler Dizisi Supplementary Material(s): Supplementary Lecture Notes			
<b>Assessment</b>			
Class activity	5%		
Homework	10%		
Midterm Exam (Written)	35%		
Final Exam (Written)	50%		
Total	100%		
<b>ECTS Allocated Based on the Student Workload</b>			
Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including the Exam week)	15	2	30
Labs and Tutorials	-	-	-
Assignments	1	6	6
Project/Presentation/Report Writing	-	-	-
E-learning Activities	-	-	-
Quizzes	-	-	-
Midterm Examination	1	14	14
Final Examination	1	22	22
Self Study	14	2	28
Total Workload			100
Total Workload/30 (h)			3.3
ECTS Credit of the Course			3