

TISHK INTERNATIONAL UNIVERSITY
FACULTY OF ENGINEERING
Department of CIVIL ENGINEERING,
2020-2021 Spring
Course Information for CE 426 HIGHWAY ENGINEERING

Course Name:	HIGHWAY ENGINEERING				
Code	Regular Semester	Theoretical	Practical	Credits	ECTS
CE 426	8	2	2	3	
Name of Lecturer(s)- Academic Title:	Ganjeena Khoshnaw - PhD.				
Teaching Assistant:	NA				
Course Language:	English				
Course Type:	Main				
Office Hours	Saturday, 08:30 am to 12:00				
Contact Email:	ganjeena.khoshnaw@tiu.edu.iq / ganjeena@yahoo.com Tel:07504452515				
Teacher's academic profile:	assistant lecturer since 2004 lecturer since 2014				
Course Objectives:	the lesson will give bright information to the students related the transportation and highway facilities. Also how to consider the required geometric and structural designs for roads.giving in details the asphalt material physical and chemical properties supported by main important tests for asphalt and hot mix materials.				
Course Description (Course overview):	Historical development of highways. Definitions. Vehicle and road user characteristics. General characteristics of highway traffic. Highway capacity. Highway location. Elements of geometric design of highways. Horizontal and vertical curves. Transition curves. Construction of subgrade, subbase, base courses. Pavement types.				

COURSE CONTENT

Week	Hour	Date	Topic
1	2	31/1-4/2/2021	Transportation in general, Road planning and Saturation method
2	2	7-11/2/2021	Highway alignment and Road construction
3	2	14-18/2/2021	Drainage system and Discharge calculation
4	2	21-25/2/2021	Highway classification and Geometric design
5	2	28/2-4/3/2021	Side distance (Stopping side distance)
6	2	7-11/3/2021	Side distance (Passing side distance)
7	2	28/3-1/4/2021	Horizontal alignment and Type of curves
8	2	4-8/4/2021	Super Elevation
9	2	11-15/4/2021	Midterm Exam
10	2	18-22/4/2021	Midterm Exam
11	2	25-29/4/2021	Vertical alignment (Side Curve)
12	2	2-6/5/2021	Vertical alignment (Crest Curve)
13	2	9-13/5/2021	Highway Intersection
14	2	16-20/5/2021	Review of the Course
15	2	23-27/5/2021	Review of the Course
16	2	30/5-3/6/2021	Review of the Course

17	2	6-10/6/2021	Final Exam
18	2	13-17/6/2021	Final Exam
COURSE/STUDENT LEARNING OUTCOMES			
1	the transportation role on environment and city planing.		
2	the elements consisting the road geometric design and sight distance requirements.		
3	the horizontal, vertical curves and supper elevation designs.		
4	road pavement types and layers.		
5	asphalt material and its main tests.		
COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES (Blank : no contribution, I: Introduction, P: Profecient, A: Advanced)			
Program Learning Outcomes			Cont.
1	Apply principles of mathematics, science, and engineering		P
2	Design and conduct experiments, as well as analyze and interpret data accurately.		P
3	Design an engineering system, component, or process to meet desired industrial needs.		P
4	Identify, formulate and solve complex engineering problems		P
5	Apply, in design and construction, the most modern design codes, standards and specifications such as; AISC, ACI, ASCE 7, IBC, etc.		P
6	Use the techniques, skills, and modern engineering tools, such as surveying instruments, and designing software that are necessary for engineering practices.		P
7	Apply knowledge and skills in construction project management and recognition of international standards and methodologies		P
8	Manage to work with multi-disciplinary teams and communicate effectively.		P
9	Identify the moral values that ought to guide the Civil Engineering profession and resolve the moral issues in the profession.		P
10	Apply the principles of sustainable development in their professional duties which go in line with the paramount safety, health and welfare of the public.		P
11	Analyze the impact of engineering solutions in a global and social context		P
12	Identify the need and have the ability to engage in lifelong learning and knowledge of contemporary issues.		P
Prerequisites (Course Reading List and References):		previous node books, internet and highway manual book.	
Student's obligation (Special Requirements):		Calculator, Lecture Notes	
Weekly Laboratory/Practice Plan:		Week	Hour
		Date	Topics
	1	2	31/1-4/2/2021
	2	2	7-11/2/2021
	3	2	14-18/2/2021
	4	2	21-25/2/2021
	5	2	28/2-4/3/2021
	6	2	7-11/3/2021
	7	2	28/3-1/4/2021
	8	2	4-8/4/2021
	9	2	11-15/4/2021
	10	2	18-22/4/2021
	11	2	25-29/4/2021
	12	2	2-6/5/2021

	13	2	9-13/5/2021
	14	2	16-20/5/2021
	15	2	23-27/5/2021
	16	2	30/5-3/6/2021
	17	2	6-10/6/2021
	18	2	13-17/6/2021
Course Book/Textbook:	highway engineering		
Other Course Materials/References:	ASTM personification book and material test procedure personification		
Teaching Methods (Forms of Teaching):	Lectures, Practical Sessions, Presentation, Project, Assignments		
COURSE EVALUATION CRITERIA			
Method	Quantity		Percentage (%)
Attendance	1		2
Participation	1		4
Quiz	2		4
Homework	1		3
Project	1		4
Midterm Exam(s)	1		25
Laboratory	1		8
Lab/Practical Exam(s)	1		6
Final Exam	1		40
	Total		100
Examinations:	Essay Questions, Multiple Choices, Short Answers		
Extra Notes:			
ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD			
Activities	Quantity	Workload Hours for 1 quantity*	Total Workload
Theoretical Hours	18	2	36
Practical Hours	18	2	18
Final Exam	1	2	2
Attendance	1	8	8
Participation	1	8	8
Quiz	2	8	16
Homework	1	8	8
Project	1	8	8
Midterm Exam(s)	1	2	2
Laboratory	1	4	4
Lab/Practical Exam(s)	1	4	4
Total Workload			114
ECTS Credit (Total workload/25)			4.56

Peer review

Signature:

Signature:

Signature:

Name:
Lecturer

Name:
Head of Department

Name:
Dean