جامعة الشرقية
A' SHARQIYAH UNIVERSITY

Course Descriptor
CVEN563 Traffic Engineering

ACADEMIC YEAR	2019-20	**SEMESTER**	Spring
Course Code	CVEN563	**Course Title**	Traffic Engineering
Credit hours	3	**Level of study**	Undergraduate
College / Centre	Engineering	Department	CVEN
Co-requisites		**Pre-requisites**	CVEN362

1. COURSE OUTLINE

[This course deals with transport modes, planning models, traffic-flow characteristics and highway capacity, speed, travel time and delay, traffic volumes, traffic accidents, parking study, intersections and at-grade intersection design, etc.

2. AIMS

[The aim of this course is to introduce traffic engineering

3. LEARNING OUTCOMES, TEACHING, LEARNING and ASSESSMENT METHODS

Learning Outcomes ***(Definitive)*** Upon successful completion of this course, students will be able to**:**	**Teaching and Learning methods** ***(Indicative)***	**Assessment** ***(Indicative)***
1. Design various types of highways and street facilities	Lectures	Assignments, Exams
2. Use professional computer software to evaluate the performance of the geometric design from the perspectives of high capacity, consistency, driver expectancy, mobility, accessibility, safety	Lectures	Assignments, Exams
3. Apply the methods in HCM to analyze highway capacity	Lectures	Assignments, Exams
4. Use the methods in Transit capacity and Quality of Service Manual to conduct transit capacity and service quality analysis	Lectures	Assignments, Exams

4. ASSESSMENT WEIGHTING

Assessment	**Percentage of final mark (%)**
1st Examination	20
2nd Examination	20
Assignments	20

Final Examination	40
TOTAL	**100%**

5. ACHIEVING A PASS

Students will achieve 3 credit hours for this course by passing **ALL** of the course assessments and achieving a **minimum overall score of 50%.**

NB *Ensure that ALL learning outcomes are taken into account

6. COURSE CONTENT (Indicative)

WEEK	LECTURE TOPIC	TIME (HOURS)
1	Introduction	1.5
	Driver behavior and impact on highway design	1.5
2	Driver behavior and impact on highway design	1.5
	Driver behavior and impact on highway design	1.5
3	AASHTO standards and policies	1.5
	AASHTO standards and policies	1.5
4	AASHTO standards and policies	1.5
	Interactive Highway Safety Design Model	1.5
5	Interactive Highway Safety Design Model	1.5
	Interactive Highway Safety Design Model	1.5
6	Interactive Highway Safety Design Model	1.5
	Interactive Highway Safety Design Model	1.5
7	Safety evaluation of highway and street geometric design	1.5
	Safety evaluation of highway and street geometric design	1.5
8	Safety evaluation of highway and street geometric design	1.5
	Safety evaluation of highway and street geometric design	1.5
9	Macroscopic traffic flow characteristics and its impact, level of service	1.5
	Macroscopic traffic flow characteristics and its impact, level of service	1.5
10	Macroscopic traffic flow characteristics and its impact, level of service	1.5
	Macroscopic traffic flow characteristics and its impact, level of service	1.5
11	Capacity and service level for basic freeway segment, weaving and diverging sections, ramp terminals, multilane and two lane highways	1.5
	Capacity and service level for basic freeway segment, weaving and diverging sections, ramp terminals, multilane and two lane highways	1.5
12	Capacity and service level for basic freeway segment, weaving and diverging sections, ramp terminals, multilane and two lane highways	1.5
	Capacity and service level for basic freeway segment, weaving and diverging sections, ramp terminals, multilane and two lane highways	1.5
13	Un-signalized and signalized intersections	1.5
	Un-signalized and signalized intersections	1.5
14	Design isolated and coordinated signal timing plans	1.5
	Traffic signals	1.5
15	Traffic signals	1.5
	Summary	1.5

5. ACHIEVING A PASS		
	TOTAL HOURS	**45**
1 - 15	Plus **RECOMMENDED INDEPENDENT STUDY HOURS**	**90**
	TOTAL COURSE HOURS	**135**

7. RECOMMENDED READING

Core text/s:

1. Traffic and Highway Engineering 5th Edition (SI), Cengage Learning. 2015.

Recommended:

1. American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets, 2004 Ed.
2. Highway capacity Manual, Transportation Research Board, 2000.
3. Traffic Flow Fundamentals, A.D. May, prentice Hall, 1990.
4. Transit Capacity and Quality of Service Manual, 2nd Ed, Transportation Research Board, 2009.
5. Interactive Highway safety Design Models, Federal Highway Administration (FHWA), 2008.

Library + online resources: