



Course Descriptor

CVEN 362 – Transportation Engineering

ACADEMIC YEAR	2019-2020	SEMESTER	Fall 2019-2020
Course Code	CVEN 362	Course Title	Transportation Engineering
Credit hours	3	Level of study	Undergraduate
College / Centre	College of Engineering	Department	CVEN
Co-requisites	--	Pre-requisites	ENGR230

1. COURSE OUTLINE

Highway planning, highway materials: soils and aggregates, asphalt binders and mixtures. Geometric design of highways, surface drainage, road construction, and introduction to pavement design. The lectures are supplemented by extensive laboratory sessions.

2. AIMS

This course introduces students to the discipline of transportation engineering and acts as the background for more advanced transportation courses.

3. LEARNING OUTCOMES, TEACHING, LEARNING and ASSESSMENT METHODS

Learning Outcomes (Definitive)	Teaching and Learning methods (Indicative)	Assessment (Indicative)
1. Able to demonstrate driver characteristics	Lecturers and discussion in class	<i>Class Tests & Assignment</i>
2. Able to conduct traffic flows analysis	Lecturers, Presentations	<i>Class Tests & Assignment</i>
3. Able to design and control the intersections on highways	Lecturers, Lab work. Group discussions.	<i>Class Tests & Assignment / Lab experiments</i>
4. Demonstrate the ability of roadways are designed and aligned	Lectures, Presentation	<i>Class Tests & Assignment</i>
5. Demonstrate the basic principles of transportation planning	Lectures, Presentation	<i>Class Tests & Assignment</i>

4. ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
Assignments	20
Mid-term Examination	2x20 = 40
Final Examination	40
TOTAL	100%

5. ACHIEVING A PASS

Students will achieve **03** credit hours for this course by passing **ALL** of the course assessments [*alternatively, list the compulsory pass assessments**] and achieving a **minimum overall score of 50%**



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*NB *Ensure that ALL learning outcomes are taken into account*

6. COURSE CONTENT (Indicative)		
WEEK	LECTURE TOPIC	TIME (HOURS)
1	Characteristics of drivers, pedestrians, vehicles, and roads	1-30
	Characteristics of drivers, pedestrians, vehicles, and roads - continue	1-30
2	Traffic engineering studies and safety	1-30
	Fundamentals of traffic flow	1-30
3	Fundamentals of traffic flow - continue	1-30
	Intersection design and control	1-30
4	Capacity and level of service for freeways and highways	1-30
	Transportation planning	1-30
5	Transportation planning - continue	1-30
	Highway surveys and location	1-30
6	Mid Term I	1-30
	Highway geometric design	1-30
7	Highway geometric design - continue	1-30
	Flexible and rigid pavement design	1-30
8	Flexible and rigid pavement design - continue	1-30
	Flexible and rigid pavement design - continue	1-30
9	Lane width measurements	1-30
	Lane width measurements - continued	1-30
10	Traffic-signal timing	1-30
	Signal phasing plan	1-30
11	Pavement marking durability	1-30
	Shockwave measurement	1-30
12	Shockwave measurement - continue	1-30
	Horizontal curve measurements	1-30
13	Vertical curve measurements	1-30
	Mid Term II	1-30
14	Horizontal & Vertical curve measurements – continue	1-30
	Test on Bitumen	1-30
15	Bicycle facility planning	1-30
	Bicycle facility planning - continue	1-30
	TOTAL HOURS	45
1 - 15	Plus RECOMMENDED INDEPENDENT STUDY HOURS	90
	TOTAL COURSE HOURS	135
7. RECOMMENDED READING		



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Core text/s:

Garber, N. J. and Hoel, L. A. (2009). *Traffic and Highway Engineering*, 4th Ed, CENGAGE Learning.

Library + online resources:

NPTEL website (nptel.ac.in) for engineering books

ICE virtual library (www.ice.org.uk)