

B. Tech Civil Engineering				
Course code: Course Title		Course Structure		Pre-Requisite
CE320: Transportation Safety and Environment		L 3	T 0	P 2
Course Objective: This course aims to develop a comprehensive understanding of road accidents, traffic safety issues and environmental pollution. This course also aims to equip students with the knowledge and skills necessary to carry out road safety audit and environmental impact assessments of highway projects.				
S. No.	Course Outcomes (CO)			
CO1	To expose students to perform traffic and transportation studies			
CO2	To expose students to understand the vulnerability of traffic and the causes of road accidents			
CO3	To expose students to learn to study the road safety parameters with the manual of road safety audit			
CO4	To expose students to learn the environmental impacts due to traffic and transportation with an understanding of relevant guidelines of the MoEF.			
S. No	Contents			
UNIT 1	Road accident situation in India, international comparison of road accidents. Multidisciplinary approach to planning for traffic safety and injury control, causes of road accidents, control measures, roles of vehicle, roadway traffic, driver, and environment, crash and injury causations; accident analysis, pre-crash and post-crash models, conflict points.			
UNIT 2	Safety auditing: road safety audit, stages of auditing, methods involved; case studies. Mixed traffic flow, traffic calming measures, strategies adopted in various countries, and case studies.			
UNIT 3	Transportation-related pollution: road transport-related air pollution, sources of air pollution, effects of weather conditions, vehicular emission parameters, urban and non-urban traffic noise sources, noise pollution, noise barriers, pollution standards measurement and analysis of vehicular emission, and imitative measures.			
UNIT 4	EIA: EIA requirements of highway projects, procedure, MoEF, UK guidelines; EIA practices in India.			
	Total			
	40			

REFERENCES		
S. No	Name of Books/ Authors/ Publishers	Year of Publication/ Reprint
1.	Khanna, S.K., Justo, C.E.G. and Veeraragavan A. "Highway Engineering", Nem Chand & Bros., Roorkee,	2014

	U.K	
2.	Kadiyali, L. R., "Traffic Engineering and Transportation Planning", Khanna Publishers, New Delhi	2018
3.	Principles of Traffic and Highway Engineering, Nicholas J. Garber and Lester A. Hoel, Cengage Learning	2010
4.	Peavy, Howard S., Rowe, Donald R. and Tchobanoglous, George, " Environmental Engineering", McGraw-Hill Education (India) Pvt. Ltd., New Delhi	1985
5.	IRC-SP:88 2019 Manual on Road Safety Audit Indian Roads Congress New Delhi	2019