

1.	Title of the course	Transportation Engineering
2.	Course number	CE218M
3.	Structure of credits (L-T-P-C)	2-1-2-4
4.	New course/modification to	Modified with CE308L/TRANSPORTATION ENGINEERING
5.	To be offered by	Civil and Environmental Engineering
6.	Proposed by	Gowri A
7.	Prerequisite	None
8.	Course Objective(s): To introduce various modules of transportation engineering, including highway planning, pavement technology, geometric design and traffic engineering. To provide exposure to many elements of transportation engineering and technological activities to aid in designing, analyzing and solving transportation related problems.	
9.	Course Content: Highway planning: alignment, land use and transportation interaction, urban transportation planning, parking, travel demand management and modeling; Pavement technology: pavement systems and types, materials, mixtures, design, analysis, performance criteria, Ministry of Road Transport and Highways (MoRTH) specifications, Indian Roads Congress (IRC) guidelines, American Association of State Highway and Transportation Officials (AASHTO) methods; Geometric design: sight distance, superelevation, horizontal and vertical alignments; Traffic engineering: fundamental parameters of traffic flow, techniques for traffic data collection and extraction, probability and statistics in traffic engineering, fundamentals of uninterrupted and interrupted traffic flow, design of traffic facilities; Fundamental experiments on aggregates, binders and mixtures; Exercises on speed and headway studies, saturation flow and delay measurement, traffic simulation software.	
10.	Textbook(s): 1. Mamlouk M S and Zaniewski J P, Materials for Civil and Construction Engineers, 4th Edition, Pearson Prentice Hall (2016). 2. Roess R P, Prassas E S and McShane W R, Traffic Engineering, 5th Edition, Pearson Prentice Hall (2019).	
11.	Reference(s): 1. Chakraborty P and Das A, Principles of Transportation Engineering, 2nd Edition, Prentice Hall India Learning Private Limited (2017). 2. Roberts F L, Kandhal P S, Brown E R, Lee D Y and Kennedy T W, Hot Mix Asphalt Materials, Mixture Design and Construction, 2nd Edition, National Asphalt Pavement Association Education Foundation, USA (1996).	