


<b>B. E. CIVIL ENGINEERING</b> <b>Choice Based Credit System (CBCS) and Outcome Based Education (OBE)</b> <b>SEMESTER - VI</b>			
<b>TRAFFIC ENGINEERING</b>			
Course Code	18CV652	CIE Marks	40
Teaching Hours/Week(L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03
<b>Course Learning Objectives:</b> This course will enable students to <ol style="list-style-type: none"> <li>1. Understand fundamental knowledge of traffic engineering, scope and its importance.</li> <li>2. Describe basic techniques for collecting and analyzing traffic data, diagnosing problems, designing appropriate remedial treatment, and assessing its effectiveness.</li> <li>3. Apply probabilistic and queuing theory techniques for the analysis of traffic flow situations and emphasize the interaction of flow efficiency and traffic safety.</li> <li>4. Understand and analyse traffic issues including safety, planning, design, operation and control.</li> <li>5. Apply intelligent transport system and its applications in the present traffic scenario.</li> </ol>			
<b>Module-1</b>			
<b>Traffic Planning and Characteristics:</b> Road Characteristics-Road user characteristics, PIEV theory, Vehicle Performance characteristics, Fundamentals of Traffic Flow, Urban Traffic problems in India, Integrated planning of town, country, regional and all urban infrastructures, Sustainable approach- land use & transport and modal integration.			
<b>Module-2</b>			
<b>Traffic Surveys:</b> Traffic Surveys- Speed, journey time and delay surveys, Vehicles Volume Survey including non-motorized transports, Methods and interpretation, Origin Destination Survey, Methods and presentation, Parking Survey, Accident analyses-Methods, interpretation and presentation, Statistical applications in traffic studies and traffic forecasting, Level of service-Concept, applications and significance.			
<b>Module-3</b>			
<b>Traffic Design and Visual Aids:</b> Intersection Design- channelization, Rotary intersection design, Signal design, Coordination of signals, Grade separation, Traffic signs including VMS and road markings, Significant roles of traffic control personnel, Networking pedestrian facilities & cycle tracks.			
<b>Module-4</b>			
<b>Traffic Safety and Environment:</b> Road accidents, Causes, effect, prevention, and cost, Street lighting, Traffic and environment hazards, Air and Noise Pollution, causes, abatement measures, Promotion and integration of public transportation, Promotion of non-motorized transport.			
<b>Module-5</b>			
<b>Traffic Management:</b> Area Traffic Management System, Traffic System Management (TSM) with IRC standards, Traffic Regulatory Measures, Travel Demand Management (TDM), Direct and indirect methods, Congestion and parking pricing, All segregation methods- Coordination among different agencies, Intelligent Transport System for traffic management, enforcement and education.			
<b>Course outcomes:</b> After studying this course, students will be able to: <ol style="list-style-type: none"> <li>1. Understand the human factors and vehicular factors in traffic engineering design.</li> <li>2. Conduct different types of traffic surveys and analysis of collected data using statistical concepts.</li> <li>3. Use an appropriate traffic flow theory and to comprehend the capacity &amp; signalized intersection analysis.</li> <li>4. Understand the basic knowledge of Intelligent Transportation System.</li> </ol>			
<b>Question paper pattern:</b> <ul style="list-style-type: none"> <li>• The question paper will have ten full questions carrying equal marks.</li> <li>• Each full question will be for 20 marks.</li> <li>• There will be two full questions (with a maximum of four sub- questions) from each module.</li> <li>• Each full question will have sub- question covering all the topics under a module.</li> <li>• The students will have to answer five full questions, selecting one full question from each module.</li> </ul>			
<b>Textbooks:</b>			

1. Kadiyali. L.R. "Traffic Engineering and Transport Planning ", Khanna Publishers, Delhi, 2013
2. S K Khanna and CEG Justo and A Veeraragavan, "Highway Engineering", Nem Chand and Bros.
3. Indian Roads Congress (IRC) Specifications: Guidelines and Special Publications on Traffic Planning and Management
4. Salter. R.I and Hounsell N.B, "Highway Traffic Analysis and design", Macmillan Press Ltd. 1996.

**Reference Books:**

1. Fred L. Mannering, Scott S. Washburn and Walter P. Kilareski, Principles of Highway Engineering and Traffic Analysis, Wiley India Pvt. Ltd., New Delhi, 2011.
2. Garber and Hoel, "Principles of Traffic and Highway Engineering", CENGAGE Learning, New Delhi, 2010.
3. SP: 43-1994, IRC Specification, "Guidelines on Low-cost Traffic Management Techniques" for Urban Areas, 1994.
4. John E Tyworth, "Traffic Management Planning, Operations and control", Addison Wesley Publishing Company, 1996.
5. Hobbs. F.D. "Traffic Planning and Engineering", University of Birmingham, Pergamon Press Ltd, 2005.

  
H.O.D.  
Dept. of Civil Engineering  
Alva's Institute of Engg. & Technology  
Mijar, Moodbidri - 574 225