B.E. Semester: VIII
Civil Engineering

Subject Name: *TRAFFIC ENGINEERING AND MANAGEMENT* (CV804-B)

A. Course objective :

- To have an overall knowledge of the traffic components and assess the traffic characteristics and related problems.
- To develop a strong knowledge base of traffic planning and its management in any transportation area.
- To provide knowledge of traffic control devices and its techniques in transportation interaction.

B. Teaching /Examination Scheme

Teaching scheme				Total Credit	Evaluation Scheme					
L	T	P	Total		Theory		Mid Sem Exam	CIA	Pract/ Tut.	Total
Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	Marks
03	02	00	05	05	03	70	30	20	30	150

C. Detailed Syllabus

Module I : (TRAFFIC ENGINEERING)

1 Fundamental of traffic flow :

Basic components of traffic flow, road user, vehicle, environment and their characteristics, speed –volume –density relationship, homogenous and heterogonous traffic flow, PCU concept, vehicle operating cost.

2 Transportation surveys:

O-Surveys, spot-speed survey (using enoscope and radar speedometer) traffic volume counts, travel time, parking survey, interaction volume count and delay surveys, methods analysis and interpretation.

3 Accident studies :

Records, analysis, safety measures, road safety audit.

4. Introduction of computer software :

TRIPS,TRANS-CAD,HCM,VISSIM and MXROADS

Module II : (TRAFFIC MANAGEMENT)

1 .Highway capacity analysis:

Level of service concept, HCM Methods, IRC recommendations.

2. Regulations :

Engineering, enforcement, education, environment measures.

3.Traffic control devices :

Signs, markings, islands ,channelization, one-way streets, speed breakers, bus stop locations, and bus ways, segregations, tidal flow arrangements, area traffic control, parking, pedestrian flow control.

4. Management techniques :

Traffic regulations ,driver, vehicle ,flow and general controls traffic devices control ,types of parking design principles ,parking restrictions, one way streets, zebra crossing, railings, pedestrian signal foot over bridges ,traffic management authorities, road lighting.

D. Lesson Planning

Sr. No.	Title of the Unit	Minimum Hours	Weightage
1.	Fundamental of traffic flow	10	25
2.	Transportation surveys	6	10
3.	Accident studies	3	5
4.	Introduction of computer software	3	10
5.	Highway capacity analysis	6	10
6.	Regulations	3	5
7.	Traffic control devices	6	10
8	Management techniques	8	15

E. List of Tutorial

1	Fundamental of traffic flow
2	Transportation surveys:

3	Accident studies
4	Introduction of computer software
5	Highway capacity analysis
6	Regulations
7	Traffic control devices
8	Management techniques

F.Instructional method and pedagogy (Continuous Internal Assessment Scheme)(CIA)

- At the start of course, the course delivery pattern, prerequisite of the subject will be discussed.
- Lecture may be conducted with the aid of multi-media projector, black board, OHP etc.
- Attendance is compulsory in lectures and practical which carries marks.
- At regular intervals assignments will be given. Students should submit all assignments during given period.
- Classroom participation and involvement in solving the problems in Tutorial rooms Carries Marks
- Internal exam of 30 marks will be conducted as a part of Mid semester evaluation.
- Experiments shall be performed in the field related to course contents.
- The course includes a practical, where students have an opportunity to build an appreciation for the concept being taught in lectures.

G. Students Learning Outcomes:

- The students will gain knowledge in the fundamentals components of traffic engineering and its features.
- The students will get a vast understanding on various traffic enforcements rules and regulations.
- The students will get aware of the different software used in the field of transportation and its utility in solving the traffic problems.

H. Recommended Study Materials

Text Books:

1 Kadiyali, L.R., Traffic Engineering & Transport Planning, Khanna Publishers, New Delhi

2 Jotin Khisty, S.C. and Kent Lall, B., Transportation Engineering – An Introduction, Prentice-Hall, NJ

3 S.C. Saxena Traffic Planning And Design .Dhanpat Rai Pub, NewDelhi

Reference Books:

4 Hutchison, B.G., Introduction to Transportation Engineering, & Planning, McGraw Hill Book Co.

5 John W. Dickey, Metropolitan Transportation Planning, Tata McGraw Hill Pub. Co.

6 Vukan R. Vuchic, Urban Public Transportation System & Technology, Prentice Hall, Inc.

7 Papacostas, C.S., Fundamentals of Transportation System Analysis, PHI

8 Jotin Khisty, C. and Kent Lall, B., Transportation Engineering – An Introduction, Prentice-Hall, NJ