

Subject Code: 1ET4010505	Subject Title: Traffic Engineering
Pre-Requisite	

RATIONALE:

Knowledge and understanding of the basic concept of Traffic Engineering is highly essential for the engineers designing and executing the road laying projects in order to make road transport system safe and workable. Traffic Engineer should understand the basics of design of signals, intersection and regulations. It is also important to understand proper methods of traffic survey and traffic management techniques. This course attempts to impart knowledge and skills of various traffic control devices to students. It is also necessary for students to learn about safety measures taken during design of the roads for prevention of accidents. Students are expected to perform various traffic surveys, analyze data and interpret the results and design of traffic control device appropriately in order to apply their knowledge in designing efficient and safe road transport systems.

COURSE OBJECTIVE:

The content should be taught and implemented with the aim to develop skills so that students are able to acquire following competencies:

1. To understand the issues involved in traffic flow.
2. To know and understand the tools for traffic studies.
3. To delineate various traffic control measures.
4. To understand measures for preventing accidents.
5. Determine the traffic requirements for road design after conducting the traffic surveys.
6. Prepare traffic management plan for highways and urban roads.

TEACHING AND EVALUATION SCHEME:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)			
Lecture	Tutorial	Practical	Credit	Theory		Practical	
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment
03	-	02	04	60	40	20	30

DETAILS OF COURSE CONTENTS:

S.NO.	TOPIC	Total Hrs.	WEIGHTAGE
1	Introduction to Traffic Engg. and Administration : 1.1 Growth of Traffic engineering, its function and measure for operation of traffic. 1.2 Schematic flow chart of Traffic engineering in Transportation department and city.	06	14%

2	Traffic Surveys : 2.1 Types of Volume count and its purposes. 2.2 Equipment used in various count methods. 2.3 Necessity of O and D survey and its methods. 2.4 Analysis and presentation of Data 2.5 Need and methods of parking survey.	06	14%
3	Road Signs and Pavement Markings : 3.1 Importance, Necessity and General principle of traffic sign. 3.2 Difference types of traffic sign as per IRC Standard and requirement. 3.3 Function and types of road marking, general principles of longitudinal pavement marking, materials and colour. 3.4 Marking of various line such as Centre line, Carriage width, Reduction, Pavement Edge line, Obstruction marking, Stop line, 3.5 Pedestrian crossing & pedestrian marking and Lay out of a signalised Junction.	08	20%
4	Traffic Signals : 4.1 Traffic signals, Phasing and Advantages and disadvantages of traffic signals. 4.2 Fixed time signals, vehicle Actuated signals. 4.3 Compute signal cycle time by Fix time cycle, Trail cycle, Approximate, Webster's and IRC method and sketch timing diagram for each face. 4.4 Need and Objective for co-ordinated Types of Co-ordinated signal.	06	14%
5	Traffic control Aids, Street Furniture and Traffic Regulations : 5.1 Various traffic Aids, Road way Delineator, Hazard markers, Object markers. 5.2 Speed breakers, Rumble strips, Guard rail, and Safety barriers. 5.3 Traffic Attenuators and Litter Bins. 5.4 Need and Scope of traffic regulations, Traffic law and Regulation speed.	08	19%
6	Road Accidents: Causes and Prevention : 6.1 Objectives of road Accident study. 6.2 Causes of road Accident. 6.3 Preventive measure for accident. 6.4 Reporting and Recording of an Accident. 6.5 Collision diagram and Condition diagram. 6.6 Traffic management measure and their Influence in accident prevention. 6.7 Legislation, Law Enforcement, Education and propaganda.	08	19%

COURSE OUTCOME:

After completing this course, student will be able to:

1. Analyse road traffic characteristics.
2. Undertake various types of road traffic studies.
3. Use relevant road traffic signs, signal and markings.
4. Suggest preventive measures to avoid accidents by analyzing the traffic conditions at site.
5. Conduct different types of Traffic Surveys.
6. Explain the reasons of accidents and their preventive measures.
7. Design of traffic signals at intersections and rotary intersection.
8. Aware of various traffic regulation and control devices.

LIST OF PRACTICAL:

SR. No.	Experiment / Exercises
1	Draw flow chart of Traffic engineering organization in transportation department of city.
2	Carry out O-D survey for given area.
3	Perform Traffic volume study at given Intersection.
4	Draw various traffic signs
5	Draw the various type of Road marking
6	Compute signal cycle time by any method from given data.
7	Draw the sketches of given traffic control Aids.
8	Draw the Collision and condition diagrams
9	Innovative practices for traffic control rules and regulations.

LIST OF REFERENCES:

Sr.no.	Title	Author
1	Traffic Engg. and Transportation planning	L R Kadiyali -Khanna Publishers. Delhi
2	Traffic planning and design	S C Saxena - Dhanpat Rai & Sons Delhi
3	Transportation Engineering Vol. I & II	V N Vazirani & S P Chaondola- Khanna Publishers. Delhi.
4	Traffic Engineering	Dr.R.P.Rethaliya