B.Tech. IV Year	L	T	P	To	C
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CE420 TRAFFIC ENGINEERING

(Dept. Elective - V)

Course Description and Objective:

The course is meant to give a brief account on characteristics of vehicles, traffic analysis and traffic control systems. It also deals with various aspects of traffic management.

Course Outcomes:

- *Conduct traffic studies for estimating traffic flow characteristics*
- *Design of traffic signal*
- *caonduct accident studies*

UNIT - I

Traffic Characteristics: Road user's characteristics **-** general human characteristics, physical, mental and emotional factors, factors affecting reaction time, PIEV theory.

Vehicular characteristics: Characteristics affecting road design-width, height, length and other dimensions. weight, power, speed and braking capacity of a vehicle.

UNIT - II

Traffic Studies : Spot Speed Studies, Volume Studies; Speed and Delay Studies**:** Purpose, causes of delay, methods of conducting speed and delay studies.

Origin and Destination Studies (O & D) : Various methods, collection and interpretation of data, planning and sampling.

Traffic Capacity Studies: Volume, density, basic practical and possible capacities, level of service.

Parking Studies: Methods of parking studies cordon counts, space inventories, parking practices.

UNIT - III

Traffic Operations and Control : Traffic regulations and various means of control - One way streets- advantages and limitations.

Traffic signals: Traffic signals, isolated signals, coordinated signals, simultaneous, alternate, flexible and progressive signal systems. Types of

traffic signals, fixed time signals, traffic actuated signals, speed control signals, pedestrian signals, flashing signals, clearance interval and problems on single isolated traffic signal.

UNIT - IV

Street Lighting : Design of street lighting system; Definitions- Luminaire, foot candle, Lumen, utilization and maintenance factors; Different types of light sources used for street lighting; Fundamental factors of night vision.

UNIT - V

Accident Studies : Causes of accidents, accident studies and records, condition and collision diagrams, preventive measures.

Expressways and freeways : problems on mass transportation and remedial measures, brief study of mass transportation available in the country.

TEXT BOOK :

1. L.R. Kadiyali, “Traffic Engineering and Transport Planning”, 5th ed., Khanna Publishers, Delhi, 2008.

REFERENCE BOOKS :

1. R.J. Slater,N.B. Hounsell, “Highway Traffic Analysis and Design”, 12th ed., Palgrave Macmillan Publishers, 2001.
2. W.S.Smith & F.W. Hurd, “Traffic Engineering by Matson”, 3rd ed., Mc Graw Hill Publishers, New York, 2002.
3. G.J. Pingnataro, “Principles of Traffic Engineering”, 4th ed., Mc Graw Hill Publishers, New York, 2000.