BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE,

Pilani Campus

INSTRUCTION DIVISION
FIRST SEMESTER 2016-2017
Course Handout (Part-II)

Date: 02/08/2016

In addition to part I (General handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No : CE G536
Course Title : Traffic Engineering and Safety
Instructor-in-charge **:** Durgesh Vikram

1. **Scope and Objective of the Course:**
   Over past few decades, a sustained increase in the per capita ownership of vehicles, has given rise to several traffic related issues including parking, accidents, delays, congestion, environmental degradation, etc. Hence, there is a need to find solutions to these problems by understanding the principal components governing them. The present course seeks to develop an understanding of the problems related to traffic management and safety. Not only that, it also aims at gaining knowledge of the analysis which can help in mitigating the problems.

2. **Text Book:**

2.1 Kadiyali L.R., Traffic Engineering and Transport Planning Khanna Publishers, Sixth Edition, New Delhi 2000

3. **Reference Book:**

3.1 May, AD, Traffic Flow Fundamentals, Prentice Hall, 1990.

4. Tentative Course Plan:

Lecture No.	Topic	Learning Objective	Reference
1-6	Road, Road User and Vehicle Characteristics	Road User Characteristics - Reaction Time Psychological and Physiological characteristics, Vehicle kinematics, Roadway Characteristics- surface conditions, slopes, curves.	1. Chapter-2
7-10	Traffic Flow Characteristics	Heterogeneous traffic, Differences- heterogeneous and homogeneous traffic flows, Volume, Density and Speed Relationships, Fundamental relation of traffic flow, Travel time and delay, Spot Speeds, Computation of AADT, Design Hourly Volume from Short and Long Term Counts, Spacing and Headway Characteristics in heterogeneous traffic flow, Vehicle arrival patterns, Headway distributions	1. Chapter-22 and 26
11-18	Traffic Studies	Traffic Volume Studies, Spot Speed Studies-Travel Time and Delay Studies - Intersection Delay Studies, Origin and destination studies, Analysis and interpretations of traffic studies; Introduction to Traffic Forecasting	1. Chapter-3,4, 5 and 10
19-22	Capacity and Level-of-Service	Capacity and Level of Service - Factors Affecting Capacity, Traffic characteristics at unsignalized and signalized intersections; capacity and LOS of signalized intersections, actuated signal control, signal coordination	1. Chapter -21
23-30	Traffic Controls	Traffic regulations- Motor Vehicle Act, Traffic Signs and Markings, street furniture; traffic regulations	1. Chapter – 13, 14, 15, 16 and 17
31-34	Traffic Safety	Accidents- data collection and analysis causes and prevention, Black Spots	1. Chapter - 18
35-38	Parking Studies	Need for Parking Studies, Off-Street and On-Street Parking; Types of Parking Surveys, Parking Space Inventory, Parking demand, Parking: Design and control, Advances in parking.	1. Chapter - 12
39-41	Advances in Traffic Engg.	Emerging Technologies and innovative concepts and techniques	Material will be given in class

5. Evaluation Scheme:

Component	Duration	Weightage	Schedule	Remarks
Mid Semester Test	90 minutes	25%	<TEST_1>	Closed Book
Assignments/ Term Paper/ Seminar/ Quiz	As announced	40%	Spread uniformly over the semester	Open Book
Comprehensive	180 minutes	35%	<TEST_C>	Closed Book

6. Chamber Consultation Hour: To be announced in the class

Instructor-in-charge