First Semester 2015-2016

Course Handout (Part II)

Date: 05.08.2015

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 G523

Course Title : Transportation Systems Planning and Management

Instructor In-Charge: Prasanta Kumar Sahu

Course Description:

Urban transportation planning presents the traditional four-stage sequential process of travel forecasting. The method of data collection and the steps involved in the planning process have also been incorporated. *Local area traffic management* deals with problems and solutions related to existing neighborhoods and their possible expansions and renovations. The planning and design of pedestrian and bicycle facilities and parking and terminal facilities have been considered in detail. *Transportation Systems Management (TSM)* covers a broad range of potential improvement strategies focusing on non-facility and low-capital cost operations. *Transportation safety* deals with Highway Safety Improvement Programme (HSIP). It begins by examining the nature and characteristics of accidents by type, severity, contributing, circumstances, and environmental conditions. Methods of identifying hazardous locations have also been included.

Scope and Objective:

The scope of transportation engineering is enormous. The course intended to provide a solid introduction to the topic of sequential transportation planning technique in urban areas. It also covers urban traffic and transportation management techniques, such as: local area traffic management, transportation systems management (TSM) and transport safety.

Text Books:

- T1 Jotin Khisty C and Kent Lall B; *Transportation Engineering: An Introduction;* Prentice Hall International, Inc, 1998
- T2 Hutchinson B.G; *Principles of Urban Transport Systems Planning;* McGraw-Hill Book Company (latest edition)

Reference Books:

- R1. Kanafani Adib; *Transportation Demand Analysis;* McGraw-Hill Book Company (latest edition)
- R1 Papacostas C.S and Prevedouros; *Transportation Engineering & Planning;* Prentice- Hall of India Pvt. Ltd. (Third edition)
- R3 Bruton M.J; *Introduction to Transportation Planning;* Hutchinson of London (Latest Edition

Course Plan:

Lecture No.	Learning Objectives	Topics to be covered	Reference* Chap./Sec. # (Book)
1 to 4	Transportation planning morphology	Model for public sector planning; System and Environment	Chapter 1/ T2
5 to 6	Data collection procedure for transportation planning	Collection of basic data	Chapter 2/ R3
7 to 10	Model transportation demand	Trip Generation analysis	Chapter 2/T2
11 to 14	Model transportation demand distribution	Trip Distribution Analysis	Chapter 4/T2
15 to 17	Model choice of travel mode	Modal Split Analysis	Chapter 3/ T2
18 to 21	Model route choice	Trip Distribution Analysis	Chapter 5/ T2
22 to 25	Introduction to environmental impact of transportation	Air Quality, Noise and Energy Impacts	Chapter 10/R1
26 to 29	Introduction to economic evaluation of alternatives	Economic and Financial Evaluation techniques, selection of project	Chapter 11/R1
30 to 34	Introduction to Transportation Systems Planning	TSM: Need, planning cycle, strategies, impact assessment, strategic management	Chapter 14/T1
35 to 39	Introduction to accident studies and analysis	Safety problems, improvement programmes, identification of hazardous locations	Chapter 16/ T1
40 to 42	Introduction to Intelligent Transport Systems (ITS)	Transport modes, issues, needs for ITS, different types	Chapter 6/ R1

Evaluation Scheme:

EC No.	Evaluation Component	Duration	Weightage	Date, Time & Venue	Nature of Component
1	Mid-semester Test	90 min	30	9/10 4:00 - 5:30 PM	Open book examination
2	Comprehensive	3 hours	40	11/12 AN	Close book examination
3	Assignments/ Seminars/ term paper		30		Home assignments, use of softwares, seminars, term paper

Chamber Consultation Hour: ***To be announced in the class***

Notices: ***Watch Civil Engineering Group Notice Board***

Make-up Policy:

1. **Make-up will be granted on a case by case basis only on genuine reasons.**

2. **For medical cases, a certificate from the concerned physician of the Medical Centre must be produced.**

Instructor-in-charge