BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI, Pilani Campus

SECOND SEMESTER 2015-2016

Course Handout Part II

Date: 01/01/2016

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 G524

Course Title : Urban Mass Transit Planning, Operations and Management

Instructor In-Charge: Prasanta K Sahu

Course Description:

Modes of public transportation and application of each to urban travel needs; comparison of transit modes and selection of technology and transit service; estimating demands in transit planning studies and functional design of transit routes; terminal design; management and operation of transit systems; model for operational management.

Scope and Objective:

The course intends to equip the students with sufficient technical knowledge on mass transit planning, operations and management. It would include the estimation of transit demand, route planning and terminal design. The course would also include operation and management of transit systems, fleet and crew management, terminal management and fiscal management.

Text Books:

- T1 Vuchic Vukan R.; *Urban Transit: Operations, Planning and Economics; John Wiley & Sons, Inc.*; 2005.

Reference Books:

- R1 Black, Alan; *Urban Mass Transportation Planning;* McGraw-Hill Inc., 1995
- Handouts will be distributed time to time.

Course Plan:

Lecture No.	Learning Objectives	Topics to be covered	Reference* Chap./Sec. # (Book)
1 to 3	History of urban transit	Major movers of earlier centuries, subway and elevated systems, arrival of motor vehicles, decline of streetcar.	Chapter 2/ T1
4 to 7	Urban transit modes	Suburban railroad, heavy rail, light rail, bus, rail versus bus, comparison of modes.	Chapter 5/ T1 and Chapter 2 / R1
8 to 10	Paratransit	Diai-a-ride, taxi, jitney, ride sharing and other modes.	Chapter 6/T1
11 to 13	Innovative technology	Personal rapid transit, people movers, rail transportation, guided busways.	Chapter 7/T1
14 to 23	Planning transit networks	Planning process, planning methodology, transportation networks, travel demand forecasting, configuration of network, spacing of routes, spacing of stops, frequency of service.	Chapter 8/ T1
24 to 26	Urban Bus Rapid Transit System	Definition and case studies with success stories.	Handout
27 to 30	Transit system performance	Line capacity, station capacity, theoretical and practical capacities of modes, quantitative performance measures.	Chapter 7/R1
31 to 35	Operations and Management	The operating cycle, scheduling, special service pattern, fare collection, marketing.	Chapter 9/ R1
36 to 38	Transit and urban development	Symbiotic relationship, impact of transit, land-use theory and simulation, measuring benefits of transit, issue of desirable urban form.	
39 to 40	Policies for the future	Future trends, major policy issues, land use policy, solving urban transportation problems.	Chapter 16/R1

Evaluation Scheme:

EC No.	Evaluation Component	Duration	Weightage	Date, Time & Venue	Nature of Component
1	Mid-semester test	90 min	30	16/3 4:00-5:30 PM	Close book examination
2	Comprehensive	3 hours	40	9/5 AN	Close book examination
3	Assignments/ Term paper/ project		20		Home assignments, seminars, term papers.

4	**Seminar**		**10**		

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 only on genuine reasons. However, prior permission is must.**
2. **For medical cases, a certificate from the concerned physician of the Medical Centre must be produced.**

Instructor-in-charge