

FIRST SEMESTER 2021-22
COURSE HANDOUT

Date: 28.08.2021

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

Course No : CE G523

Course Title : Transportation Systems Planning and Management

Instructor-in-Charge : Subhasis Pradhan

Instructor(s) : Md. Rushdie Ibne Islam

Tutorial/Practical Instructors: NA

1. Course Description: System and environment; sequential transportation systems planning: trip generation, trip distribution, modal split and traffic assignment, Transportation surveys, Land-use models, Travel demand forecasting, Urban structure and its influence of travel intensity, Urban goods movement. Transportation Systems Management (TSM) actions: traffic management techniques for improving vehicular flow, preferential treatment for high occupancy modes, demand management technique for reduced traffic demand, staggered hours, vehicle restrictions; planning for pedestrians.

2. Scope and Objective of the Course: The course aims at imparting knowledge on understanding of urban transportation problems in planners' perspective, definition of the problem, setting clear goals and objectives to serve as guiding factors in the planning process, identification of the causal factors influencing the demand for urban travel and development of relationship between the factors and the travel demand.

3. Text Books:

T1 Sarkar, P.K., Maitri, V., and Joshi, G.J. *Transportation Planning, Principles, Practices and Policies*, PHI Pvt. Ltd., 2015

T2 Papacosta, C.S., and Prevedouros *Transportation Engineering and Planning*, PHI Pvt. Ltd., 2004

4. Reference Books:

R1 Garber, N. J. And Hoel, L. A. *Traffic and Highway Engineering*, Brooks/Cole: CA, USA, latest edition

R2 Chakroborty, P. and Das, A. *Principles of Transportation Engineering*, PHI Pvt. Ltd., latest edition

R3 Kadiyali, L. R. *Traffic Engineering and Transport Planning*, Khanna Publishers, latest edition.

5. Course Plan:

Module No.	Lecture Session	Reference	Learning outcomes
1	5 lectures on transportation planning process and basic concepts of travel demand.	T1 and T2	To understand the transportation planning process.
2	9 lectures on travel surveys and data collection, and travel demand estimation; this will include trip generation and trip distribution	T1	To learn data collection procedures for collecting travel demand data. Also, to understand estimation techniques for trip generation and trip distribution
3	6 lectures on modal share estimation using Utility Theory and Multinomial logit model	T1	To understand the experiment design for choice modeling to quantify the modal share of competing modes.
4	8 lectures on traffic assignment techniques using various shortest path algorithms	T1	To understand different algorithms to find the shortest path and learn traffic assignment techniques.
5	4 lectures on regional as well as long-term transportation planning	T1	To understand the regional planning process and the fundamentals of preparing long-term transport plans.
6	4 lectures on transportation systems management	R3	To learn the management strategies for managing the travel demand.

6. Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of component (Close Book/ Open Book)
Mid-Semester Test	90 Min.	30	<TEST_1>	Closed Book
Comprehensive Examination	3 h	30	<TEST_C>	Closed Book
Quiz/Assignment	TBA	30	Spread over the semester	Open Book
Term paper	TBA	10	TBA	Open Book

7. Chamber Consultation Hour: To be announced during the lecture.

8. Notices: Notices concerning this course will be displayed on Department Notice Board.

9. Make-up Policy: Prior permission for all make ups are a must. For medical emergencies, requests have to be forwarded by the Chief Warden to the satisfaction of IC.

10. Note (if any): Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

Instructor-in-charge

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