



**Department of Planning,
Lecture Plan, Odd Semester, AY 2024-25**

Name of Course: Master in Transport Planning (PG)

Subject Name:	Transport Infrastructure Design (MTP215)
Year & Sem:	II-year, III semester
Course Duration:	July 22, 2024 to Nov 14, 2024
Course Coordinator:	Dr. M N V Pavan Kumar
Number of Credits:	03
Subject Category:	TC
Total Periods/Week:	03 (See Time Table for details)
Internal Assessment	50
End Evaluation	50
Total Marks	100
Total No. of Internal Assessment & Mode	Three (Internal Assessment 1 (Exam/Assignment), Mid Semester (Written Exam), Internal Assessment 2 (Exam/Assignment))

Subject Objective: To introduce planning strategies, design considerations and standards for transportation infrastructure.

Week	Lecture / Session Topic (Teaching-Learning Objective aimed)	Unit and Assignment
Week 1 (23 July)	Design of roundabouts; Design of grade separated intersection and interchange	Unit 1: Road Infrastructure
Week 2 (30 July)	Design of tunnel roads; Design of bus stops and shelters, bus bays	
Week 3 (6 Aug)	Parking facilities (surface and multi – level) layout design; design of pedestrian facilities (subways, foot over bridges); cycle tracks; NMT facilities	
Week 4 (13 Aug)	Rail alignment surveys; Permanent way- rails, sleepers, ballast, sleepers; Curvature of track types of curves, degree of curvature, super -elevation, transition curves	Unit 2: Rail Infrastructure Assignment 1- (15 Marks)
Week 5 (20 Aug)	Railway points, crossings and junctions. station yards	
27 August to 08 Sept (except first years)	Field Trip	
Week 7 (10 Sept)	Terminals- size, parking, circulation, platforms, passenger service and amenities area; metro rail alignment and stations design elements	Unit 2: Rail Infrastructure
17-21 Sept	Mid- Semester Assessment week	(20 Marks)



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Week 9 (24 Sept)	Airport location planning; Components of airport design; Air side development – runways, taxiways, aprons, air and ground navigation and traffic control aids;	Unit 3: Airports
Week 10 (1 Oct)	Land side development – passenger building, cargo facilities, internal airport circulation and parking; Design of ground access facilities and airport support facilities etc.; land side airport connectivity planning	
Week 11 (8 Oct)	Harbours - Types, layout, components of harbour- entrance, approach channel, turning basin, sheltered basin, breakwaters, wharves and quays, dry docks, Jetties and piers	Unit 4: Ports, Docks and Harbours (Special Lectures from industry experts.)
Week 12 (15 Oct)	Appurtenances to Harbour- Aprons, Transit Sheds, Warehouses, Moorings; Ports- types, components, Seaport location planning and land side connectivity.	
Week 13 (22 Oct)	Types of modal interchange, facility requirements for interchanges	Unit 5: Multimodal Interchange Assignment 2- (15 Marks)
Week 14 (29 Oct)	Components of modal interchange design, space standards, movement control, parking;	
Week 15 (5 Nov)	Components of modal interchange : design standards, access control design, mobility assistance.	
Week 16 (12 Nov)	International case studies and best practices for modal interchanges;	

Reference books:

1. Blow, C. J. (2005), Transport terminals and modal interchanges: planning and design, Elsevier, United Kingdom.
2. Kadiyali L. R (2016), Transportation Engineering, Khanna Publishers, New Delhi.
3. Indian Road Congress Manuals (IRC 65, IRC 92, IRC 80, IRC 11, IRC 103)
4. Pyrgidis, Christos N.(2016) Railway Transportation Systems: Design, Construction and Operation ("International Perspectives on Science, Culture and Society"), CRC.
5. Horonjeff, Robert, Francis X. McKelvey, William J. Sproule, and Seth B. Young. 2010. *Planning and Design of Airports*. 5th ed. New York: McGraw-Hill Education.
<https://www.accessengineeringlibrary.com/content/book/9780071446419>

Note:



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1. Any other closed holidays as declared by SPAV shall supersede the above lecture plan. Holidays shown above may alter as per Notice from time to time.
2. Assessment Sessions may be re-scheduled, with prior intimation.
3. Reading lists provided is not exhaustive and is subject to addition – students are advised to follow progression of class to keep abreast of the new reading lists, if any.