



Model Institute of Engineering
& Technology (Autonomous)
Course Handout

Kot, Bhalwal, Jammu

COURSE HANDOUT

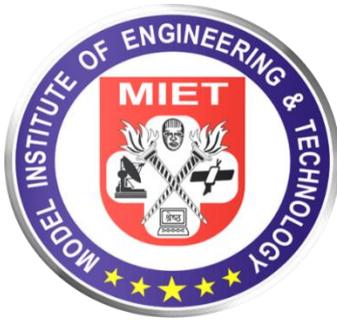
URBAN TRANSPORTATION PLANNING(CE-503)

BE – 5th Semester [Branch: CE]

ACADEMIC YEAR (2023-24)

Mr. Abhijeet Singh

Assistant Professor



Department of Civil Engineering

Model Institute of Engineering & Technology (Autonomous)

KotBhalwal, Jammu - 181122

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Dr. Arun K. Gupta Teaching-Learning Centre

Version 1.1

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Please Do Not Print Unless Necessary



Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
							Sessional	Final Exam	Total
CE-503	Urban Transportation Planning	Core	4	3	1	0	50	100	150

COURSE OUTCOMES

At the end of the course the student will be able to:	
CO1	Understand the demand concept as the basis of economic activity.
CO2	Articulate the various laws of production in both short and long run work for designing the optimum level output.
CO3	Analyze the various types of market structures.
CO4	Interpret the various pricing methods and strategies.
CO5	Evaluate the various macroeconomic concepts affecting the overall economy and undertake economic analysis.

Unit-I

Urban Transportation System planning, conceptual aspects – Transportation Planning Process-I, Evaluation and Choice-I, Sequence of activities involved in transport Analysis-I.

Trip Generation Analysis: Introduction, Details of Trip Generation-I, Trip Production Statistical Analysis-I, Category Analysis or Cross Classification-I.

Geometric design of highways: the highway cross sectional elements, camber-sight distance, types of sight distances, design of horizontal alignments, super elevation, widening of pavements on horizontal curves, transition curves, design of vertical alignments, gradients, summit.

(12 Hours)

Unit-II

Highway Materials: Desirable properties, testing procedures, standards and standard values relating to soil, stone aggregates, bitumen and tar, fly- ash/pond-ash. role of filler in bituminous mix, materials of filler. specifications of dlc and pqc for rigid pavement.

(8 Hours)

Unit-III

Traffic Assignment: Description of transport Network-1, Route choice Behaviour, The minimum path, Route Assignment techniques-2, examples. Highway Construction and Equipment's, highway construction of rigid and flexible pavements including types of road rollers, specifications of compaction of different layers of bituminous roads, modern pavers for CC roads. roller compacted concrete road construction.

(13 Hours)

Unit-IV

Design of flexible and rigid pavements and their conceptual aspects as per IRC. Factors affecting design and performance of CC pavements.

Introduction of Railway Engineering: Types and selection of gauges, selection of alignment, ideal permanent ways and cross sections in different conditions, drainage, salient features and types of components viz. rails, sleepers, ballast, rail fastenings.

(10 Hours)

Unit-V

Introduction of Airports and Harbours: Requirements to airport planning, airport classifications, factors in airport site selection, airport size planning of airport: requirements of airport- terminal area, runway length etc.

(7 Hours)

Textbooks

S.No	Name of the Books	Name of the Author	Publisher Name	Edition (Pub.Yr.)
1	Highway Engineering	Khanna SK & CG Justo	Nem Chand &	Highway





2.	Highway Engg.	LR Kadyali, Khanna	Brothers, Tech Publications	Engineering 3rd (2017)
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Reference Books

S.No	Name of the Books	Name of the Author	Publisher Name	Edition (Pub.Yr.)
1	Railway Engineering	Satish Chandra and MM Agarwal	Oxford University	Railway Engineering
	Dock & Harbour Engineering,	Gautam H. Oza,	Charotar publication House.	5th (2019)

COURSE PLAN

Unit-I Transportation Planning and Highway Geometric Design

S.No	Topics	Recommended Books
1	Highway Engineering Introduction	Book 1, Ch.1
2	History and Classification of Roads	Book 1, Ch.1
3	Urban Transportation System planning, conceptual aspects – Transportation Planning Process-I, Evaluation and Choice-I, Sequence of activities involved in transport Analysis-I.	Book 1, Ch.1
4	Trip Generation Analysis: Introduction, Details of Trip Generation-I, Trip Production Statistical Analysis-I, Category Analysis or Cross Classification I.	Book 2, Ch.2
5	Geometric design of highways: the highway cross sectional elements, camber-sight distance, types of sight distances, design of horizontal alignments,	Book 2, Ch.2
6	super elevation, widening of pavements on horizontal curves, transition curves, design of vertical alignments, gradients, summit.	Book 2, Ch.2
Unit-II Highway Materials		
7	Desirable properties, testing procedures, standards and standard values relating to soil, stone aggregates, bitumen and tar, fly-ash/pond-ash.	Book 1, Ch.2
8	role of filler in bituminous mix, materials of filler. specifications of dlc and pqc for rigid pavement.	Book 1, Ch.2
Unit-III Traffic Assignment		
9	Description of transport Network-1, Route choice Behaviour, The minimum path, Route Assignment techniques-2, examples.	Book 2, Ch.2
10	Highway Construction and Equipment's, highway construction of rigid and flexible pavements including types of road rollers,	Book 2, Ch.2
11	specifications of compaction of different layers of bituminous roads, modern pavers for CC roads. roller compacted concrete road construction.	Book 2, Ch.2
Unit-IV Design of pavements & Railway Engineering		
12	Design of flexible and rigid pavements and their conceptual aspects as per IRC. Factors affecting design and performance of	Book 2, Ch.3



	CC pavements.	
13	Introduction of Railway Engineering: Types and selection of gauges, selection of alignment, ideal permanent ways and cross sections in different conditions, drainage, salient features and types of components viz. rails, sleepers, ballast, rail fastenings.	Book 1, Ch.4
Unit-V Introduction of Airports		
14	Introduction of Airports: Requirements to airport planning, airport classifications, factors in airport site selection, airport size planning of airport: requirements of airport- terminal area, runway length etc.	Book 2, Ch.8

ADDITIONAL WEB RESOURCES

1.	NPTEL: https://archive.nptel.ac.in/courses/105/107/105107067/
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GRADING AND ASSESSMENT

- **Sessional Test:** 20 marks
- **Assignment:** 20 marks
- **Attendance:** 10 marks
- **Final Examination:** 100 marks

COURSE POLICIES

- **Attendance:** Minimum 75% attendance is mandatory to appear in the final examination of the course.
- **Academic Integrity:** MIET's academic integrity policies apply. Plagiarism will not be tolerated.
- **Late Submissions:** Assignments and projects must be submitted by the specified timelines.

FACULTY INFORMATION

- **Office Hours**
Monday (12:05 PM - 12:55 PM)
Friday (12:05 PM - 12:55 PM)
- **Contact Information**
abhijeet.civ@mietjammu.in