

M. Tech. – II Semester - III

Subject Name: Mass Transit System Planning

Subject Code: MTTC15302

Type of course: OE

Prerequisite: Basic concept of Mass transportation and its system.

Rationale: The students will be able to understand the role of various modes of Mass Transportation like Bus and Rail and its Planning and Management

Teaching and Examination Scheme:

TEACHING SCHEME				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	100
3	0	0	3	60	25	15	-	-	

CA1: Continuous Assessment (assignments/projects/open book tests/closed book tests) **CA2:** Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems **TEE:** Term End Examination **TEP:** Term End Practical Exam (Performance and viva on practical skills learned in course) **CA3:** Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

Content:

Sr. No.	Topics	Teaching Hrs.	Module Weightage
1.	Transit System and Issues: Introduction to Mass Transport – Role of various modes of Mass Transport – Problems and their Impact – Transport System Performance at National, State, Local and International levels – National Transport Policy	6	10%
2.	Public Transit System: Urban Transport System – Public Transport System Re-gensis and Technology – Physical performance of Public Transport System – Public Transport and Urban Development Strategies - Characteristics of Rail Transit – Vehicle Characteristics, ITS	9	15%
3.	Bus Transit Planning and Scheduling: Route Planning and Scheduling – Bus Transport System – Performance and Evaluation – Scheduling – Conceptual patterns of bus service – Network Planning and Analysis – Bus Transport System Pricing – Bus Transit System Integration – Analytical Tools and Techniques for Operation and Management – Bus Rapid Transit Systems – Case Studies	10	25%
4.	Rail Transit Terminals and Performance Evaluation: Performance Evaluation – Efficiency, Capacity, Productivity and Utilisation – Performance Evaluation Techniques and Application – System Network Performance – Transit Terminal Planning and Design	10	25%

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5.	Impact of Transit: Policies and Strategies for Mass Transport – Need for Integrated Approach – Unified Transport Authorities – Institutional arrangement – Urban Transport Fund – Parking Policies - Private Sector in Mass Transport – Bus and Rail Integration – Co-ordination of Feeder Services – Transit Oriented Land Use Development – Case Studies - Urban Transportation and Land use – Impact of Transport Development on Environment – Remedial measures – Policy Decisions – Recent Trends in Mass Transportation Planning and Management	10	25%

Suggested Specification table with Marks (Theory/Practical):

% Distribution of Marks					
R Level	U Level	A Level	N Level	E Level	C Level
20%	20%	20%	20%	10%	10%

Legends: R: Remembrance, **U:** Understanding; **A:** Application, **N:** Analyze, **E:** Evaluate **C:** Create and above Levels (**Revised Bloom’s Taxonomy**)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Text Books:

Sr. No.	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication	Publication Edition
1	An Introduction to Transportation Planning	Michael J. Bruton	Hutchinson (ISBN 9780367726355)	1985	1 st
2	Urban Transportation Planning – A Decision Oriented Approach	Michael D. Meyer and Eric J. Miller	McGraw Hill Book Company, New York (ISBN: 978-0070417526)	1984	1 st
3	Mass Transportation Problems	Svetlozar T. Rachev, Ludger Rüschen Dorf	Springer (ISBN: 978-3540627449)	1998	1 st
4	Urban Mass Transportation Planning	Alan Black	McGraw-Hill Inc.,US (ISBN: 978-0070055575)	1995	1 st
5	Transportation Engineering – Planning and Design	Paul H.Wright	Wiley and Sons, New York (ISBN: 978-0-471-17396-0)	1989	4 th

OE: Open Elective

6	Urban Transportation Planning: A Decision-oriented Approach	Michael D. Meyer, Eric J. Miller	McGraw Hill Higher Education (ISBN: 978-0070417526)	1984	1 st
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Course Outcome:

Sr. No.	CO Statement After learning this subject, students will be able to	Marks % weightage
CO-1	To understand the role of various modes of Mass Transport, problems and their impact. (R,U,A – cognitive level)	10%
CO-2	To have knowledge on planning of various transit systems like bus and rail, their scheduling and management strategies. (R, U,A,N – Cognitive level)	15%
CO-3	To have understanding on route planning and scheduling of bus transit planning. (U,A,N,E – Cognitive level)	25%
CO-4	To explore performance evaluation techniques and application of rail transit system. (A,N,E – Cognitive level)	25%
CO-5	To have knowledge of policies and strategies for Mass Transport. (R,U,A – cognitive level)	25%

List of Open Source/learning website:

- <https://nptel.ac.in/courses/105/107/105107067/>
 - Urban Transportation Planning
- <https://nptel.ac.in/courses/105/105/105105204/>
 - Public Transportation: Introduction to public transportation