

GUJARAT TECHNOLOGICAL UNIVERSITY
Mass Transportation (Elective)
SUBJECT CODE: 1075509
B.PLAN 7th SEMESTER

Aim:

Objective:

1. To understand the evolution and role of urban public transportation modes, systems and services, focusing on bus and rail. Technological characteristics are described, along with their impacts on capacity, service quality, and cost.
2. To study current practice and new methods for data collection and analysis, performance monitoring, route and network design, frequency determination, and vehicle and crew scheduling are covered.
3. To briefly discuss effects of pricing policy and service quality on ridership, methods for estimating costs associated with proposed service changes, organizational models for delivering public transportation service including finance and operations, and fare policy

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE (E)	PA (M)	VIVA (V)	PA(I)	
2	0	0	2	50	50	0	0	100

L- Lectures; T- Tutorial/Teacher Guided Student Activity/Field work; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment.

Content:

Sr. No.	Content	Total Hrs
Unit - 1	Introduction to mass transportation planning Current Status and Recent Trends; Significant Influences; A Critical Assessment; Influences of Public Transport; Future Influences Ingredients for Future Success	4
Unit - 2	Alternative services and modes BRTS; Metrorail; Monorail; regional suburban rail etc; choosing appropriate mass transport mode	2

Unit - 3	Organizational models and contract structure Public transport organizational models: roles for the public and private sectors; Case Studies	4
Unit - 4	Public Transport Planning Design & process Data collection: needs and techniques; Ridership forecasting; Frequency determination; Vehicle scheduling; Crew scheduling; Workforce planning; High ridership corridor strategies; Network and route structure; Transit signal priority; Fare Policy; Best Practices in the world	14
Unit – 5	Service standards and performance measurement Appropriate Fare policy strategies; Performance of a single route; High ridership corridor	4
	Total no. of hours	32

Reference Books:

Text / Reference Books:				
S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Bruun, Eric	Better Public Transit Systems: Analyzing Investments and Performance.	2007 ISBN: 9781932364484.	Washington, DC: American Planning Organization
2.	Ceder, Avishai	Public Transit Planning and Operation: Theory, Modeling and Practice	2007. ISBN: 9780750661669.	Burlington, MA: Elsevier
3.	Vuchic, Vukan.	Urban Transit: Operations, Planning and Economics	2005. ISBN: 9780471632658.	New York, NY: Wiley
4.	Fielding, Gordon.	Managing Public Transit Strategically: A Comprehensive Approach to Strengthening Sales and Monitoring Performance.	1987. ISBN: 9781555420680.	New York, NY: Jossey-Bass,

Course Outcome:

List of Exercises / Practicals:	
1.	Visit to Janmarg monitoring Control Room
List of Assignments/Tests:	
1	Test on Unit 2 and Unit 3.
2	Case Study based Assignments on Unit 4 or Unit 5.