



SARDAR VALLABHBHAI PATEL EDUCATION SOCIETY'S
R. N. G. PATEL INSTITUTE OF TECHNOLOGY - RNgPIT

An Autonomous Institute u/s UGC Act 1956

Approved by AICTE & affiliated to Gujarat Technological University

Bardoli - Navsari Road, At: Isroli (tarpore), Po: Afwa, Tal: Bardoli, Dist: Surat, Pin - 394620
 Phone: 95129 00457, 95129 00458 • Email: Info@rngpit.ac.in • Website: www.rngpit.ac.in

Program Name: MBA

Level: Post Graduation

Branch: Logistics & Supply Chain Management

Course / Subject Code: 1MB1301

Course / Subject Name: Multimodal Transportation Management

w. e. f. Academic Year:	2025-26
Semester:	III
Category of the Course:	Core Course (CC) -SP Major

Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes	RBT Level
01	Understand the principles, components, and regulations of multimodal transportation systems.	U
02	Analyze the operational and cost structures of different modes of transportation.	A
03	Apply strategies for optimizing multimodal logistics operations to enhance efficiency and sustainability.	A
04	Evaluate the role of digitalization, automation, and global trade policies in multimodal transportation.	E

**Revised Bloom's Taxonomy (RBT)*

Teaching and Examination Scheme:

Teaching Scheme (in Hours)				Total Credits L+T+(PR/2) + (SL/2)	Assessment Pattern and Marks				Total Marks
L	T	PR	TW/SL	C	Theory		Tutorial / Practical		
					SEE (TH)	IAT	CCE	SEE (P)	
3	1	0	0	4	70	30	50	00	150

SEE: Semester End Examination

IAT: Internal Assessment Test

CCE: Continuous and Comprehensive Evaluation

TW/SL : Term Work and Self Learning



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Course Content:

Unit No.	Content	No. of Hours	% of Weightage
1.	Introduction to Multimodal Transportation Systems <ul style="list-style-type: none"> • Definition and Importance of Multimodal Transportation • Modes of Transportation: Rail, Road, Air, Water, and Pipeline • Characteristics, Advantages, and Limitations of Each Mode • Key Players in Multimodal Transportation (Logistics Providers, Freight Forwarders, Customs Authorities) • Legal and Regulatory Frameworks: Indian Multimodal Transport Act, 1993 & International Regulations • Case Study: Evolution of Multimodal Transport in India 	12	25%
2.	Infrastructure and Operations of Multimodal Transport <ul style="list-style-type: none"> • Competitive Advantage: Cost Leadership, Differentiation, and Port and Terminal Operations: Role in Multimodal Transportation • Inland Container Depots (ICDs) and Container Freight Stations (CFS) • Intermodal Hubs and Logistics Parks • Role of Warehousing and Inventory Management in Multimodal Systems • Challenges in Infrastructure Development for Multimodal Transport • Case Study: Impact of Dedicated Freight Corridors on Multimodal Logistics 	12	25%
3.	Cost and Efficiency in Multimodal Transportation <ul style="list-style-type: none"> • Cost Structures of Different Transport Modes • Freight Pricing Strategies and Tariffs • Time and Cost Trade-offs in Mode Selection • Fuel Efficiency and Environmental Impact of Multimodal Systems 	12	25%



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	<ul style="list-style-type: none"> • Optimization Techniques for Route Planning and Load Consolidation • Case Study: Cost-Benefit Analysis of Rail vs. Road Transportation 		
4.	<p>Digitalization and Risk Management in Multimodal Transport</p> <ul style="list-style-type: none"> • Role of Technology: IoT, AI, and Blockchain in Multimodal Logistics • Automation in Freight Tracking and Fleet Management • Cybersecurity Threats and Risk Mitigation Strategies • Risk Management in Multimodal Transportation (Delays, Damage, Regulatory Risks) • Sustainability Challenges and Green Supply Chain Initiatives • Case Study: Digital Transformation of a Global Logistics Company 	12	25%
5.	Students will be engaged in practical activities such as Analyzing the Multimodal Transport Network of a Major Logistics Company, Freight Cost Optimization for an Export Business, Case Study on Port Efficiency and Its Impact on Logistics, Risk Assessment in International Multimodal Transport and Evaluating the Sustainability Aspects of Multimodal Transportation	12	30 Marks
Total		60	100

Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks (in %)					
R Level	U Level	A Level	N Level	E Level	C Level

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)



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Evaluation:

Students shall be evaluated on the following components:

A	Continuous and Comprehensive Evaluation	(Internal Assessment – 50 Marks)
	Practical activities suggested in Module V	30 Marks
	Class Presence & Participation	10 Marks
	Quiz	10 Marks
B	Internal Assessment Test	(Internal Assessment-30 Marks)
C	Semester End Examination	(External Assessment-70 Marks)

References/Suggested Learning Resources:

Books:

1. Rodrigue, J.-P. (2020). *The Geography of Transport Systems* (5th ed.). Routledge.
2. Coyle, J. J., Novack, R. A., Gibson, B. J., & Bardi, E. J. (2017). *Transportation: A Supply Chain Perspective* (9th ed.). Cengage Learning.
3. Wood, D. F., Barone, A., Murphy, P. R., & Wardlow, D. (2012). *International Logistics* (3rd ed.). Springer.
4. Christopher, M. (2020). *Logistics and Supply Chain Management* (5th ed.). Pearson Education.
5. Button, K. (2010). *Transport Economics* (3rd ed.). Edward Elgar Publishing.
6. Rushton, A., Croucher, P., & Baker, P. (2017). *The Handbook of Logistics and Distribution Management* (6th ed.). Kogan Page.
7. Bowersox, D. J., Closs, D. J., Cooper, M. B., & Bowersox, J. C. (2019). *Supply Chain Logistics Management* (5th ed.). McGraw-Hill.
8. Hesse, M., & Rodrigue, J.-P. (2004). *The Transport Geography of Logistics and Freight Distribution*. *Journal of Transport Geography*, 12(3), 171-184

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