

2025

**Curriculum
Master of Technology (M.Tech.)
Intelligent Transport System
(for Working Professionals)**



SCHOOL OF TECHNOLOGY

GATI SHAKTI VISHWAVIDYALAYA

**Central University, Sponsored by Ministry of Railways
Lalbaug, Vadodara - 390 004, Gujarat, India**

Curriculum

M.Tech. (Intelligent Transport Systems)

L-T-P (Lecture-Tutorial-Practice)

Lecture (L): 1 Credit = 15 Hrs.

Tutorial (T): 1 Credit = 15 Hrs.

Practice (P) [(Practical / Project Work): 1 Credit = 30 Hrs.

Semester	Subjects	Lecture (L) Hrs./week	Tutorial (T) Hrs./week	Practice (P) Hrs./week	Credits	Hours	Page No.
I	Data Analysis Using Inferential Statistics and Modelling	2	1	0	3	45	
	AI/ML in Transportation	2	1	0	3	45	
	Intelligent Transportation Systems and Architecture	2	1	0	3	45	
	Introduction to Multimodal Transportation Ecosystem	2	0	0	2	30	
	Information Technology for Business Transformation	2	1	0	3	45	
	Total Credits				14		
II	Transportation System Safety and Reliability	2	1	0	3	45	
	Transportation Models and Quantitative Methods	2	1	0	3	45	
	Ethics in AI	2	0	0	1	15	
	Transportation Data and Analysis Lab	0	0	2	1	30	
	Programming Laboratory	0	0	2	1	30	
	Research Methodology	2	1	0	3	45	
	Total Credits				12		
	Total First Year Credits				26		
	Summer Internship - I (6 Weeks)			8	4		
	Total First-Year Credits Including Summer Internship - I (6 Weeks)				30		
III	Multivariate statistics and applications	2	1	0	3	45	
	Transportation System Management and Demand Management	2	1	0	3	45	
	Advances in traffic flow modelling and simulation	2	1	0	3	45	
	Human Factor in ITS	3	0	0	3	45	
	Total Credits				12		
IV	Sensors Technologies for ITS	3	0	0	3	45	
	Transportation Simulation Laboratory	0	0	2	1	30	
	ITS applications Lab	0	0	2	1	30	
	Seminar – Cases on ITS applications	0	0	2	1	30	
	Elective 1	2	0	0	2	30	
	Connected and Autonomous vehicles in Transport systems	3	0	0	3	45	
	Smart Cities, Sustainability and ITS	3	0	0	3	45	
	Total Credits				14		
	Total Second Year Credits				26		
	Summer Internship - II (6 Weeks)			8	4	120	

	Total Second Year Credits including Summer Internship - II (6 Weeks)				30		
V	ICT, Machine Learning and Artificial Intelligence in ITS	3	0	0	3	45	
	Master's Thesis Project -Part I	0	0	8	4	120	
	Elective 2	2	0	0	2	30	
	Total Credits				9		
VI	Elective 3	2	0	0	2	30	
	Master's Thesis Project - Part II	0	1	20	10	300	
	Total Credits				12		
	Total Third Year Credits				21		
	Total Program Credits				81		

List of Electives for M.Tech. (ITS)

Sl. No.	Name of the Elective	Credits	Hrs.
1	Analytical Tools for Data Structuring and Visualization	2	30
2	Urban and Regional Planning Models	2	30
3	Big Data and IOT in Transportation	2	30
4	Advances in Data Analytics	2	30
5	Technologies of Transportation – Digital Twins, Block Chain and Deep AI	2	30
6	Intelligent Transport in Supply chain management	2	30