M.Tech (Transportation Engineering)

Curriculum & Detailed syllabus

Curriculum

Semester - I						
SNo	**Code**	**Course**	**L**	**T**	**P**	**Credits**
1	CE 5111	Urban Transportation Planning	3	0	0	3
2	CE 5112	Traffic Engineering and Management	3	0	2	4
3	CE 5113	Highway Materials, Testing, and Characterization	3	0	2	4
4	CE 5114	Geometric Design of Transportation Facilities	3	0	2	4
5	CE 5116	Programming and Algorithms in TE	2	0	2	3
6	HS XXXX	Effective writing and Oral communication	2	0	0	2
		Total Credits	16	0	8	**20**
Semester - II						
	Code	**Course**	**L**	**T**	**P**	**Credits**
7	CE 5211	Pavement Design and Management	3	0	0	3
8	CE 5212	Optimization models and methods in Transportation Engineering	3	0	0	3
9	CE 5213	Transportation Software Laboratory	0	0	6	3
10	CE 5214	Transportation Data Analysis	3	0	0	3
11	CE 50XX	Engineering Elective - I	3	0	0	3
12	CE 50XX	Engineering Elective -II	3	0	0	3
13	XX XXXX	Engineering Elective - III	3	0	0	3
		Total Credits	18	0	6	**21**
Semester-III						
	Code	**Course**	**L**	**T**	**P**	**Credits**
14	CE 50XX	Engineering Elective - IV	3	0	0	3
15	CE 5141	Industry seminars	0	0	0	0
16	CE 5142	Industry Internship	0	0	0	0
17	CE 5160	Thesis - I	0	0	24	8
		Total Credits				**11**
Semester-IV						
	Code	**Course**	**L**	**T**	**P**	**Credits**
18	CE 5260	Thesis - II	0	0	36	12
		Total Credits				**12**

Total Number of Credits in the programme – 64 (Sixty-Four)

Elective – I

- CE 5031 Road Safety Engineering
- CE 5032 Airport Infrastructure Planning and Design
- CE 5033 Sustainable Transportation Materials
- CE 5034 High-Speed Rail Infrastructure Planning and Engineering
- CE 5035 Sustainable and Green Mobility systems

Elective – II

- CE 5036 Intelligent Transportation Systems
- CE 5037 Traffic Flow Modelling and Simulation
- CE 5038 Freight Transportation Systems and Modelling
- CE 5039 Low Volume Roads
- CE 5040 Future Mobility Innovations
- CE 5041 Pavement Evaluation and Rehabilitation

Elective - III

- Autonomous and connected vehicles
- Wireless sensors and their applications (IoT applications)
- Digital twins / Communication systems
- Vehicle dynamics
- Enterprise risk management
- Electric vehicles and their infrastructure
- **Any relevant elective**

Elective – IV (3rd semester)

- CE 5042 Transportation Asset Management
- CE 5043 GIS for Transportation Systems
- CE 5044 Behavioural Travel Modelling
- CE 5045 Environmental Impacts of Transportation
- CE 5046 Pavement Drainage systems
- CE 5047 Transportation Economics
- CE 5048 Transportation Economics, Policies, and Financing
- CE 5049 Big data analytics in Transportation
- CE 5050 Mass Rapid Transportation
- CE 5051 Introduction to Multi-Modal Transportation Systems