

# DEPARTMENT OF CIVIL ENGINEERING

## M. Tech. (Transportation Engineering)

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>1<sup>st</sup> YEAR</b>					<b>Semester- I (Autumn)</b>									
1.	CEN-561	Traffic Analysis and Design	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
2.	CEN-562	Pavement Analysis and Design	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
3.	CEN-563	Urban Mass Transit Systems	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
4.	CEN-564	Geometric Design	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
5.	-	Program Elective – I	PEC	3/4										
		Total		19/20										
					<b>Semester-II (Spring)</b>									
1.	CEN-664	Transportation Planning	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
2.	CEN-700	Seminar	SEM	2	0	0	2	3	-	-	-	-	100	-
3.		Program Elective – II	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
4.		Program Elective – III	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
5.		Program Elective - IV	PEC	3/4										
6.		Program Elective - V	PEC	2	-	-	4	-	3	-	50	-	50	-
		Total		19/20										
<b>2<sup>nd</sup> YEAR</b>					<b>Semester- I (Autumn)</b>									
1.	CEN-701A	Dissertation Stage–I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
					<b>Semester-II (Spring)</b>									
1.	CEN-701B	Dissertation Stage–II (contd. From III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										
		Total Credits		<b>68/70</b>										

**Note: Students can take 1 or 2 audit courses as advised by the supervisor, if required.**

## Program Elective Courses (Transportation Engineering)

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>Autumn Semester Electives</b>														
1.	BM-513	Business Statistics	PEC	3	3	-	-	3	-	15	-	35	50	-
2.	CEN-501	Environmental Modelling and Simulation	PEC	4	3	1	2/2	3	-	20	20	20	40	-
3.	CEN-513	Remote Sensing and Digital Image Processing	PEC	4	3	0	2	3	-	15	25	20	40	-
4.	CEN-521	Advanced Numerical Analysis	PEC	4	3	0	2	3	-	15	25	20	40	-
5.	CEN-522	Advanced Soil Mechanics	PEC	4	3	1	2/2	3	-	20	20	20	40	-
6.	CEN-543	Advanced Concrete Design	PEC	4	3	0	2	3	-	15	25	20	40	-
7.	CEN-545	Finite Element Analysis	PEC	4	3	-	2	3	-	15	25	20	40	-
8.	CEN-565	Planning, Design and Construction of Rural Roads	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
9.	CEN-566	Airport Planning and Design	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
1.	CEN-567	Transportation Systems Analysis	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
2.	CEN-568	Advanced Highway Material Characterisation	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
3.	CTN-501	Quantitative Techniques for Infrastructure Systems	PEC	4	3	-	2	3	-	15	25	20	40	-
<b>Spring Semester Electives</b>														
4.	CEN-604	Environmental Impact and Risk Assessment	PEC	4	3	1	-	3	-	25	-	25	50	-
5.	CEN-614	Theory and Application of GIS	PEC	4	3	-	2	3	-	15	25	20	40	-
6.	CEN-621	Advanced Geotechnical Exploration and Testing	PEC	4	3	1	-	3	-	25	-	25	50	-
7.	CEN-661	Advanced Highway Construction and Maintenance	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
8.	CEN-662	Intersection Design and Control	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
9.	CEN-663	Pavement Evaluation and Management	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
10.	CEN-665	Road Traffic Safety	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
11.	CEN-666	Transport Economics	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
12.	CEN-667	Transportation Studies and Analysis Lab	PEC	2	-	-	4	-	3	-	50	-	-	50
13.	CEN-668	Multi-Agent Transport Simulation Framework	PEC	2	-	-	4	-	3	-	50	-	-	50
14.	CEN-639	Transportation Data Analysis Techniques	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-

Department of Civil Engineering

Pre-PhD Courses

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>Autumn Semester Electives</b>														
1.	CEN-901	Sustainability Assessment of Bioenergy Systems	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-