DEPARTMENT OF EARTHQUAKE ENGINEERING

M.Tech. (Soil Dynamics)

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
1st YEAR					**Semester- I (Autumn)**									
1.	EQN-501	Theory of Vibrations	PCC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
2.	EQN-504	Finite Element Method	PCC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
3.	EQN-513	Numerical Methods for Dynamic Systems	PCC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
4.	EQN-521	Geotechnical Earthquake Engineering	PCC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
5.		Programme Elective	PEC	4	-	-	-	-	-	-	-	-	-	-
		Total		19	12	3	1							
Semester-II (Spring)														
1.	EQN-524	Earthquake Resistant Design of Foundations	PCC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
2.	EQN-700	Seminar	SEM	2	-	-	-	-	-	-	-	-	100	-
3.		Programme Elective	PEC	4	-	-	-	-	-	-	-	-	-	-
4.		Programme Elective	PEC	4	-	-	-	-	-	-	-	-	-	-
5.		Programme Elective	PEC	3/4	-	-	-	-	-	-	-	-	-	-
6.		Programme Elective	PEC	3/4	-	-	-	-	-	-	-	-	-	-
		Total		19-21	3	-	-							
2nd YEAR					**Semester- I (Autumn)**									
1.	EQN-701A	Dissertation Stage–I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
Note: Students can take 1 or 2 audit courses as advised by the supervisor, if required.														
Semester-II (Spring)														
1.	EQN-701B	Dissertation Stage–II (contd. From III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										
		Total Credits		**68-70**										

Program Elective Courses [M.Tech. (Structural Dynamics / Soil Dynamics / Seismic Vulnerability and Risk Assessment)]

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
1.	EQN-503	Engineering Seismology	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
2.	EQN-511	Earthquake Resistant Design of Masonry Structures	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
3.	EQN-512	Advanced Earthquake Resistant Design of Structures	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
4.	EQN-514	Seismic Evaluation and Retrofitting of Structures	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
5.	EQN-515	Mechanics of Deformable Media	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
6.	EQN-519	Dynamic Soil Structure Interaction	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
7.	EQN-521	Geotechnical Earthquake Engineering	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
8.	EQN-522	Seismic Microzonation	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
9.	EQN-524	Earthquake Resistant Design of Foundations	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
10.	EQN-532	Vulnerability and Risk Analysis	PCC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
11.	EQN-533	Seismotectonics	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
12.	EQN-534	Advanced Seismic Microzonation	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
13.	EQN-535	Seismic Disaster Mitigation and Management	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
14.	EQN-536	Ground Failure Hazard	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
15.	EQN-537	Earthquake Precursors and Early Warning Systems	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
16.	EQN-538	Geoinformatics	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
17.	EQN-539	Ground Shaking Hazard	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
18.	EQN-546	Instrumentation and Model Testing Techniques	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
19.	EQN-548	Discrete Time Signal Processing	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
20.	EQN-551	Random Vibrations	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
21.	EQN-552	Reliability Based Design	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
22.	EQN-558	Advanced Structural Dynamics	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
23.	EQN-560	Earthquake Resistant Design of Bridges and Concrete Dams	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
24.	EQN-562	Dynamics of Plates, Shells and Arches	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-

25.	EQN-563	Earthquake Resistant Design of Structures	PCC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
26.	EQN-566	Structural Response Control for Seismic Protection	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
27.	EQN-571	Ground Improvement Techniques	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
28.	EQN-572	Machine Foundation	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
29.	EQN-576	Seismic Slope Stability: Earth Dams Retaining Walls	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
30.	EQN-577	Constitutive Modeling in Soil Dynamics	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
31.	EQN-584	Engineering Applications of Geophysical Techniques	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
32.	EQN-590	Strong Motion Seismology	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
33.	EQN-591	Seismic Design of Steel Buildings	PEC	3	3	0	2/2	3	0	15-30	20	15-25	30-40	-