

M. Tech. in Rock Engineering for Infrastructure Development

Sl. No.	Subject Code	SEMESTER I	L	T	P	C
1.	HS5111	Technical Writing and Soft Skill	1	2	2	4
2.	CE5105	Advanced Soil Mechanics	3	0	0	3
3.	CE5106	Rock Engineering	3	0	2	4
4.	CE5107	Engineering Behaviour of Rock	3	0	0	3
5.	CE51XX/ CE61XX	DE-I: (Rock Engineering Elective)	3	0	0	3
6.	CE51XX/ CE61XX	DE-II: (Dept. / Rock Engineering Elective)	3	0	0	3
7.	XX61PQ	IDE	3	0	0	3
	TOTAL		19	2	4	23

Sl. No.	Subject Code	SEMESTER II	L	T	P	C
1.	CE5205	Computational Geomechanics	3	0	2	4
2.	CE5207	Analysis and Design of Underground Structures	3	0	2	4
3.	CE5208	Landslides and Avalanches	3	0	0	3
4.	CE52XX/ CE62XX	DE-III: (Rock Engineering Elective)	3	0	0	3
5.	CE52XX/ CE62XX	DE-IV: (Dept. / Rock Engineering Elective)	3	0	0	3
6.	RM6201	Research Methodology	3	1	0	4
7.	IK6201	IKS	3	0	0	3
	TOTAL		21	1	4	24

Sl. No.	Subject Code	SEMESTER III	L	T	P	C
1.	CE6198	Summer Internship/Mini Project*	0	0	12	3
2.	CE6199	Project I	0	0	30	15
	TOTAL		0	0	42	18

Sl. No.	Subject Code	SEMESTER IV	L	T	P	C
1.	CE6299	Project II**	0	0	42	21
	TOTAL		0	0	42	21

Total Credit from Semester I to IV: 86

ELECTIVE GROUPS

Department Elective - I (Rock Engineering Elective)						
Sl. No.	Subject Code	Subject	L	T	P	C
1.	CE6106	Soil Dynamics	3	0	0	3
2.	CE6107	Rock Slope Engineering	3	0	0	3
3.	CE6108	Constitutive Modelling in Geotechnics	3	0	0	3
4.	CE6109	Geoenvironmental Engineering	3	0	0	3
5.	CE6110	Biogeotechnics	3	0	0	3

Department Elective – II (Rock Engineering Elective)						
Sl. No.	Subject Code	Subject	L	T	P	C
1.	CE6111	Rock Mechanics	3	0	0	3
2.	CE6112	Environmental Rock Engineering	3	0	0	3
3.	CE6113	Pavement Geotechnics	3	0	0	3
4.	CE6114	Probabilistic Methods in Geotechnical Engineering	3	0	0	3

Department Elective – II (Departmental Elective)						
Sl. No.	Subject Code	Subject	L	T	P	C
1.	CE6103	Environmental Toxicology and Risk Assessment	3	0	0	3
2.	CE6115	Advanced Structural Mechanics	3	0	0	3
3.	CE6116	Bridge Engineering and Design	3	0	0	3
4.	CE6128	Highway Geometric Design and Safety	3	0	0	3
5.	CE6129	Airport Engineering	3	0	0	3

Department Elective - III (Rock Engineering Elective)						
Sl. No.	Subject Code	Subject	L	T	P	C
1.	CE6206	Geotechnical Earthquake Engineering	3	0	0	3
2.	CE6207	Soil-Structure Interaction Analysis	3	0	0	3
3.	CE6208	Mine Wastes Generation and Management	3	0	0	3
4.	CE6209	Coupled Process in Fractured Geological Media	3	0	0	3
5.	CE6210	Ground Improvement Techniques	3	0	0	3
6.	CE6211	Utilization of industrial byproducts for geotechnical applications	3	0	0	3
7.	CE6212	Rock Engineering for River Valley Projects	3	0	0	3

Department Elective – IV (Rock Engineering Elective)						
Sl. No.	Subject Code	Subject	L	T	P	C
1.	CE6213	Design of Underground Excavations	3	0	0	3
2.	CE6215	Forensic Geotechnical Engineering	3	0	0	3
3.	CE6216	Special Topics in Rock Engineering for Infrastructural Development	3	0	0	3

Department Elective – IV (Departmental Elective)						
Sl. No.	Subject Code	Subject	L	T	P	C
1.	CE5217	Geoinformatics for Engineers	3	0	0	3
2.	CE5218	Groundwater Hydrology	3	0	0	3
3.	CE5219	Open Channel Hydraulics	3	0	0	3
4.	CE6218	Finite Element Method	3	0	0	3
5.	CE6219	Structural Health Monitoring	3	0	0	3
6.	CE6220	Condition Assessment and Retrofitting of Structures	3	0	0	3
7.	CE6223	Uncertainty, Risk and Reliability Analyses in Civil Engineering	3	0	0	3
8.	CE6228	Analytical Techniques for Infrastructure Systems Analysis	3	0	0	3
9.	CE6229	Advanced Flexible Pavement Analysis and Design	3	0	0	3
10.	CE6230	Advanced Concrete Pavement Analysis and Design	3	0	0	3
11.	CE6231	Advanced Pavement Material Characterization	3	0	0	3