

Lesson Plan/ Course Break – up
PCC-CVE203-T ENGINEERING GEOLOGY

Name of the Faculty	Ms. Manju Godara
Discipline	B.Tech in Civil Engineering
Semester	III (2nd Year)
Subject	Engineering Geology
Lesson Plan Duration	15 Weeks (from September to December2021)
Work Load (Lecture / Practical) per week (in hrs.)	Lectures – 03

Week	Theory	
	Lecture Day	Topic (Including assignment / Test)
1 st	1	General Geology: Branches and scope of geology
	2	Importance of geology in Civil engineering
	3	Earth-surface features and internal structure, weathering of rock
2 nd	4	Mineralogy: Definition of a crystal and mineral
	5	physical properties in mineral identification
	6	rock forming minerals and their identification - quartz and its varieties
3 rd	7	feldspar, hornblende, olivine, mica, garnet, kyanite, calcite, talc, bauxite
	8	corundum, gypsum, fluorite, apatite, beryl, barite, asbestos, magnetite, hematite.
	9	Petrology: Formation and classification of rocks - Igneous, Sedimentary and metamorphic rocks
4 th	10	their texture and structures, properties of granite, pegmatite, dolerite, gabbro
	11	charnockite, basalt, sandstone, conglomerate, breccia, limestone, shale, laterite
	12	schist, gneiss, quartzite, marble, khondalite and slate
5 th	13	Drilling Techniques, Core Recovery, RQD, Engineering Properties of Rocks
	14	Structural Geology: Outcrop, Strike and dip, types and classifications of folds, faults, joints, unconformities.
	15	Engineering properties of rocks: Drilling, Core recovery
6 th	16	Sample preparation, tests on rock samples - compression, tensile, shear and slake durability tests.
	17	Ground Water: Water tables, aquifers, occurrence of ground water in different geological formations
	18	springs, selection of a site for well sinking and ground water investigations
7 th	1st Minor Test	
8 th	19	Earthquakes and Landslides: Causes and effects of earthquakes and landslides
	20	Remedial measures to prevent damage for engineering structures
	21	subsurface Investigations: Soil Profile
9 th	22	Geophysical methods - Electrical Resistivity and Seismic refraction methods.
	23	Dams: Types of dams
	24	Requirements of dam sites

10 th	25	preliminary and detailed geological investigations for a dam site	
	26	preliminary and detailed geological investigations for a dam site	
	27	Case histories of dam failures and their causes.	
11 th	28	Case histories of dam failures and their causes.	
	29	Geology of the major dam sites of India.	
	30	Factors affecting the seepage and leakage of reservoir and the remedial measures.	
12 th	31	Factors affecting the seepage and leakage of reservoir and the remedial measures.	
	32	Tunnels: Purpose of tunneling	
	33	Tunnels: Purpose of tunneling	
13 th	34	geological considerations for tunneling	
	35	geological considerations for tunneling	
	36	geothermal step	
14th	2nd Minor test		
15 th	37	over break	
	38	stand up time	
	39	logging of tunnels	