

Week	Theory		Topic Covered Date and Remarks		
	Lecture Day	Topic (Including Assignment/Test)	Date	HOD	Director-principal
1 st	1.	Introduction to soil exploration: Scope- Methods of soil exploration			
	2.	Spacing- significant depth-boring and sampling techniques- types of samples			
	3.	Sample disturbances- penetration tests (Standard Cone Penetration Test			
2 nd	4.	Standard Penetration Test			
	5.	Geophysical methods (Seismic Refraction Method & Electrical Resistivity Method).			
	6.	Earth Pressure: Earth Pressures at rest condition- states of plastic equilibrium			
3 rd	7.	Rankine's theory for active and passive conditions-			
	8.	Influence of surcharge- water table- wall friction- Numerical Problems for the determination of Active and Passive Earth Pressure diagrams-			
	9.	Critical height of an Unsupported Vertical Cut.			
4 th	10.	Stability of Slopes: Infinite slopes- Critical Depth of a cohesive Infinite Slope- types of failure			
	11.	Swedish Slip Circle Method- Taylor's stability Number and Stability Curves			
	12.	Concept of factors of safety- Bishop's Method of slices			
5 th	13.	Effect of sudden draw down and submergence.			
	14.	Design of Shallow Foundation: Bearing Capacity- Definitions- depth of foundation			
	15.	Terzaghi's general bearing capacity equation- IS code equation			
6 th	16.	Factors affecting bearing capacity- Influence of eccentric and inclined loads.			
	17.	Bearing capacity by penetration tests- Plate load test.			
	18.	Design Criteria for Shallow Foundations- Stability- Shear- and Settlement Failures			
7 th		-----Ist Minor Test-----			
8 th	19.	Pile Foundations: Types- function- selection of piles			
	20.	Pile driving formulae- point- bearing and friction piles.			
	21.	Load carrying capacity of single pile			
9 th	22.	Group action- spacing of piles			
	23.	Negative skin friction			
	24.	Concept of under reamed piles			
10 th	25.	Caissons and Wells: Introduction-components			
	26.	Shapes- stability of well foundation			
	27.	Sinking of well			
11 th	28.	Tilts and shifts.			
	29.	Drainage and Dewatering of Soil: Methods of Ditches and Sump			
	30.	Well Point System- Shallow Well System			
12 th	31.	Deep Well Drainage-			
	32.	Vacuum Method- Electro Osmosis Method			
	33.	Seepage Analysis for various conditions of Fully penetrating slot and partially penetrating slot			
13 th	34.	Seepage Analysis for various conditions of Fully penetrating slot and partially penetrating slot, Protective Filters			
	35.	Soil stabilization and Geo-textiles: Need and advantages of Ground Improvement techniques-			
	36.	- Stabilization (Mechanical- Lime- Cement- bitumen- Chemical) of Soils and its advantages			
14 th		-----2 nd Minor Test-----			

15 th	37.	Geo-textiles (Concept- Types Functions			
	38.	Use of Geo-textiles in Earth Dam Construction- Road Works- Railway works			
	39.	Use of Geo-textiles in - Erosion Control and in Bearing capacity Improvement			