

For Lecture's in **B. Tech. Civil Engineering Vth Semester**

Course No.	Title of the Course	Course Structure	
CE-307N	GEOTECHNOLOGY-I	L-T-P	3-1-0
COURSE OUTCOMES (CO)			
CO1	Students will be able to study the sub-surface soil and its properties and methods of sampling and testing.		
CO2	Students will be able to study the different types of shallow foundation and its design.		
CO3	Students will be able to study the different types of pile foundation and its design.		
CO4	Students will be able to study the different types of. Drilled Piers and Caisson Foundations and their design.		
UNIT NO`	Topics To Be Covered	Lecture Nos	
1	Introduction to Sub-Surface Exploration Stages in Soil Exploration Guidelines for Exploration Based on Structure Types	1-3	
	Ground Water Observations	4	
	Excavation and Boring Methods	5	
	Soil Sampling and Disturbance	6	
	Sounding Methods Interpretation of Sounding Tests Geophysical Methods and Pressure-Meter Test Exploration Logs & Reporting	7-10	
	Introduction to Drainage and Dewatering Ditches, Sumps, and Well Point Systems	11-12	
	Advanced Dewatering Techniques	13	
	Consolidation by Sand Piles and Eductor Method Application of Dewatering Methods in Construction Projects	14-15	
II	Design Criteria for Structural Safety of Foundations	11-13	
	Ultimate Bearing Capacity & Modes of Shear Failure	14-16	
	Effects of Groundwater Table and Eccentricity	17	
	IS Code Recommendations for Shallow Foundations	18--19	

	Settlement Criteria for Foundations Factors Affecting Bearing Capacity & Methods of Improvement	20-21
	Plate Load Test & Interpretation	22-23
	Types of Shallow Foundations Proportioning and Design of Footings	24
	Raft and Floating Foundations	25
III	Introduction to Pile Foundations	26
	Load Capacity & Static Analysis of Piles	27
	Dynamic Analysis & Pile Load Tests	28-29
	Negative Skin Friction & Uplift Capacity	30
	Batter Piles & Lateral Load Capacity	31
	Group Action in Piles & Numerical Problem Pile Cap Design & Settlement Analysis Negative Skin Friction in Pile Groups & Uplift Resistance	32-33
IV	Introduction to Drilled Piers Design of Drilled Piers	34
	Types of Caissons and Their Applications	35
	Caisson Construction Procedures Well Foundations: Design and Construction	36-37
	Sinking of Wells & Rectification of Tilts and Shifts	38
	IS Code Recommendations for Tilts & Shifts	39

Sr. No.	Course Coordination Committee	Name	Contact No	E-Mail Id
1.	Course Coordinator	Er. Ajeet	8708171615	ajeet.civil@piet.co.in