

 In Pursuit of Excellence	<b>Lecture Plan &amp; Course Coverage</b>	SESSION-2024-2025
		SEM-5 <sup>th</sup>

**Total Period: 40**

Sr. No.	No. of Periods	Topics/Sub Topics	Reference Books	CO Covered	Planned Date	Coverage Date	Sign
1.	1	Origin and classification: Preview of Geotechnical field problems in Civil Engineering	[1,7]	CO1			
2.	1	Soil formation, transport and deposit,	[1,7]	CO1			
3	1	Soil composition, Basic definitions, Weight volume relationships,	[1,7]	CO1			
4	1	Clay minerals, Soil structure, Index properties, sensitivity and thixotropy, Particle size analysis,	[1,7]	CO1			
5	2	Unified and Indian standard soil classification system.	[1,7]	CO1			
6	1	Assignment test 1		CO1			
7	1	Assignment Analysis 1		CO1			
8	2	Soil Hydraulics: Stress conditions in soil-total, effective and neutral stresses and relationships.	[4,10,11]	C02			
9	1	Permeability - Darcy's Law, hydraulic conductivity, equivalent hydraulic conductivity in stratified soil.	[4,10,11]	C02			
10	2	Seepage, flow nets, seepage calculation from a flow net, flow nets in anisotropic soils, seepage through earth dam,	[4,10,11]	C02			
11	1	capillarity, critical hydraulic gradient and quick sand condition, uplift pressure, piping.	[4,10,11]	C02			
12	1	Assignment test 2		C02			
13	1	Assignment Analysis 2		C02			
14	2	Soil compaction, water content - dry unit weight relationships. Factors controlling compaction.	[9,10,11]	CO3			

15	1	Field compaction equipment; field compaction control; Proctor needle method. Consolidation:	[9,10,11]	CO3			
16	2	Primary and secondary consolidation, Terzaghi's one dimensional theory of consolidation, Consolidation test,.	[9,10,11]	CO3			
17	1	Normal and Over Consolidated soils, Over Consolidation Ratio, determination of coefficient of consolidation	[9,10,11]	CO3			
18	1	Assignment test 2		CO3			
19	1	Assignment Analysis 2		CO3			
20	1	Stress Distribution in soil: Elastic constants of soils and their determination,	[8,10,11]	CO4			
21	2	Boussinesq equation for vertical stress, The Westergaard equation, Stress distribution under loaded areas, Concept of pressure bulb, contact pressure.	[8,10,11]	CO4			
22	2	Shear Strength: Mohr-Coulomb failure criterion, shear strength parameters and determination; direct and tri-axial shear test;	[8,10,11]	CO4			
23	1	unconfined compression test; pore pressure, Skempton's pore pressure coefficients, and Soil liquefaction.	[8,10,11]	CO4			
24	1	Assignment test 2		CO4			
25	1	Assignment Analysis 2		CO4			
26	2	Earth pressure: Classical theories, Coulomb and Rankine's approaches for frictional and $c-\phi$ soils,	[8,10,11]	CO5			
27	2	inclined backfill, Graphical methods of earth pressure determination. Stability	[8,10,11]	CO5			

		of slopes - finite and infinite slopes, types of slope failure,					
28	2	Culmann's method & Method of slices, Stability number & chart, Bishop's method.	[8,10,11]	CO5			
29	1	Assignment test 2		CO5			
30	1	Assignment Analysis 2		CO5			

**Name & Sign. of Faculty**

**Sign. of Reviewer**

**Sign. of HOD**