LESSON PLAN.
Academic Session :- 2021(W)
Subject :-GEOTECHNICAL ENGG. , TH-2

Teacher :- KALYANI MOHANTY

Total Period :- 60 per Sem
Theory :- 4P/week
SEMESTER:-3RD (SEC A)

MONTH	DATE	DAYS	SYLLABUS TO BE COVERED	NOS. OF PERIODS AVAILABLE
			1. INTRODUCTION (1P)	
OCTOBER	10/26/2021	Tuesday	1.1- Soil and Soil Engineering. 1.2- Scope of Soil Mechanics.	1
			2. PRELIMINARY DEFINITIONS AND RELATIONSHIP. (6P)	
	10/27/2021	Wednesday	2.1- Soil as a three Phase system.	1
	10/30/2021	Saturday	2.2- Weight volume relationships: Water Content,	1
NOVEMBER	11/1/2021	Monday	Density, Specific gravity, Voids ratio, Porosity,	1
	11/2/2021	Tuesday	Percentage of air voids, air content, degree of saturation, density Index, Bulk/Saturated/dry/submerged density.	1
	11/3/2021	Wednesday	Numerical problems	1
	11/6/2021	Saturday	Numerical problems	1
			3 .STUDY OF INDEX PROPERTIES. (4P)	
	11/8/2021	Monday	3.1- Water Content	1
	11/9/2021	Tuesday	3.2- Specific Gravity	**1**
	11/10/2021	Wednesday	3.3- Particle size distribution, Sieve analysis,	1
	11/13/2021	Saturday	3.4 – Consistency of Soils, Atterberg's Limits, Plasticity Index, Consistency Index, Liquidity Index	1
			4 CLASSIFICATION OF SOIL. (6P)	
	11/15/2021	Monday	4.1- General.	1
	11/16/2021	Tuesday	4.2- Particle size Distribution.	**1**
	11/17/2021	Wednesday	-Textural Classification.	1
	11/20/2021	Saturday	-HRB Classification.	1
	11/22/2021	Monday	-Unified Soil Classifications.	1
	11/23/2021	Tuesday	- I.S. Classification.	1
			5. PERMEABILITY AND SEEPAGE (7P)	
	11/24/2021	Wednesday	5.1- Concept of Permeability, Darcy's Law, Co-efficient of Permeability,	1
	11/24/2021	Wednesday	5.2- Factors affecting Permeability.	1
	11/27/2021	Saturday	5.3- Constant head permeability and	1
	11/29/2021	Monday	Numerical problems	1
	11/30/2021	Tuesday	5.3 Falling head permeability Test.	1

	12/1/2021	Wednesday	Numerical problems	1
	12/4/2021	Saturday	5.4- Seepage pressure, Phenomenon of quick sand	1
			6.COMPACTION AND CONSOLIDATION. (8P)	
	12/6/2021	Monday	6.1- Compaction, Light and heavy compaction Test,	1
	12/7/2021	Tuesday	6.1 Optimum Moisture Content of Soil, Maximum dry density, Zero air void line	1
	12/8/2021	Wednesday	6.2- Factors affecting Compaction.	1
	12/11/2021	Saturday	6.3- Field compaction methods and their suitability.	1
	12/13/2021	Monday	Numerical problems	1
	12/14/2021	Tuesday	6.4- Consolidation, distinction between compaction and consolidation.	1
	12/15/2021	Wednesday	Numerical problems	1
	12/18/2021	Saturday	6.5- Terzaghi's model analogy of compression/ springs showing the process of consolidation – field implications	1
DECEMBER			**7 SHEAR STRENGTH.(6P)**	
	12/20/2021	Monday	7.1- Concept of shear strength, Mohr- Coulomb failure theory,	1
	12/21/2021	Tuesday	7.1 Cohesion, Angle of internal friction, strength envelope for different type of soil,	1
	12/22/2021	Wednesday	7.2- Measurement of shear strength;- Direct shear test,	1
	12/27/2021	Monday	7.2- Measurement of shear strength; triaxial shear test,	1
			7.2- Measurement of shear strength; unconfined compression test	1
	12/28/2021	Tuesday	7.2- Measurement of shear strength; vane-shear test	1
			8 EARTH PRESSURE ON RETAINING STRUCTURES.(8P)	
	12/29/2021	Wednesday	8.1- Active earth pressure, Passive earth pressure,	1
JANUARY	1/1/2022	Saturday	Earth pressure at rest.	1
	1/3/2022	Monday	Numerical Problems	1
	1/4/2022	Tuesday	8.2- Use of Rankine's formula for the following cases (cohesion-less soil only)	1
	1/5/2022	Wednesday	Numerical Problems	1
	1/8/2022	Saturday	(i) Backfill with no surcharge	1
			Numerical Problems, , (ii) backfill with uniform surcharge	1

		Numerical Problems	1
		9.FOUNDATION ENGINEERING.(14P)	
		9.1- Functions of foundations,	1
		Shallow and deep foundation,	1
		Different type of shallow and deep foundations with sketches.	1
		Types of failure (General shear, Local shear & punching shear)	1
		9.2- Bearing capacity of soil,	1
		9.2- Bearing capacity of soil, bearing capacity of soils using Terzaghi's formulae & IS Code formulae for strip,	1
		Numerical problems	1
		9.2- Bearing capacity of soil, bearing capacity of soils using Terzaghi's formulae & IS Code formulae for Circular footings.	1
		Numerical problems	1
		9.2- Bearing capacity of soil, bearing capacity of soils using Terzaghi's formulae & IS Code formulae for square footings.	1