

DISCIPLINE: CIVIL	SEMESTER: 3RD	NAME OF THE TEACHING FACULTY: Mrs RASMI GADAPALLA
SUBJECT NAME: GEO TECHNICAL ENGG.	No. of Days per Week Class Allotted: 03 days	Semester From Date: 01/08/2023 To Date: 30/11/2023 No of Weeks : 18
August (1st week)	1st week (day 1,2,3)	1 Introduction 1.1 Soil and Soil Engineering 1.2 Scope of Soil Mechanics 1.3 Origin and formation of soil
August (2nd week)	2nd week (day 1)	2 Preliminary Definitions and Relationship 2.1 Soil as a three Phase system. 2.2 Water Content, Density, Specific gravity, Voids ratio, Porosity, Percentage of air voids, air content, degree of saturation, density Index, Bulk/Saturated/dry/submerged density, Interrelationship of various soil parameters
August (2nd,3rd week)	2nd week (day 2,3) 3rd week (day 1,2,3)	3 Index Properties of Soil 3.1 Water Content 3.2 Specific Gravity 3.3 Particle size distribution: Sieve analysis, wet mechanical analysis, particle size distribution curve and its uses 3.4 Consistency of Soils, Atterberg's Limits, Plasticity Index, Consistency Index, Liquidity Index
August (4th,5th week)	4th week (day 1,2,3) 5th week (day 1)	4 Classification of Soil 4.1 General 4.2 I.S. Classification, Plasticity chart
August (5th week) September (2nd,3rd week)	August 5th week (day 2,3) September 2nd week (day 1,2,3) 3rd week (day 1)	5 Permeability and Seepage 5.1 Concept of Permeability, Darcy's Law, Co-efficient of Permeability, 5.2 Factors affecting Permeability. 5.3 Constant head permeability and falling head permeability Test. 5.4 Seepage pressure, effective stress, phenomenon of quick sand
September (3rd,4th,5th week)	3rd week (day 1) 4th week (day 1,2,3) 5th week (day 1,2)	6 Compaction and Consolidation 6.1 Compaction: Compaction, Light and heavy compaction Test, Optimum Moisture Content of Soil, Maximum dry density, Zero air void line, Factors affecting Compaction, Field compaction methods and their suitability 6.2 Consolidation: Consolidation, distinction between compaction and consolidation. Terzaghi's model analogy of compression/ springs showing the process of consolidation – field implications

Rasmi Gadapalla

31/7/2023

(Senior Lecturer civil)

September (5th week) October (1st, 2nd week)	5th week (day 3) October-1st week (day 1, 2, 3) 2nd week (day 2)	7 Shear Strength 7.1 Concept of shear strength, Mohr-Coulomb failure theory, Cohesion, Angle of internal friction, strength envelope for different type of soil, Measurement of shear strength,- Direct shear test, triaxial shear test, unconfined compression test and vane-shear test
October (1st, 2nd, 3rd, 4th week)	2nd week (day 3) 3rd week (day 1, 2, 3) 4th week (day 1)	8 Earth Pressure on Retaining Structures 8.1 Active earth pressure, Passive earth pressure, Earth pressure at rest. 8.2 Use of Rankine's formula for the following cases (cohesion-less soil only) (i) Backfill with no surcharge, (ii) backfill with uniform surcharge
November (1st, 2nd, 3rd, 4th week)	4th week (day 2, 3) 5th week (day 1, 2, 3) November 1st week (day 3) 2nd week (day 1, 2, 3) 3rd week (day 1, 2, 3) 4th week (day 1, 2, 3)	9 Foundation Engineering 9.1 Functions of foundations, shallow and deep foundation, different type of shallow and deep foundations with sketches. Types of failure (General shear, Local shear & punching shear) 9.2 Bearing capacity of soil, bearing capacity of soils using Terzaghi's formulae & IS Code formulae for strip, Circular and square footings, Effect water table on bearing capacity of soil 9.3 Plate load test and standard penetration test.

Ramni Chakraborty
31/7/2023
(Sr Lecturer (Civil))