


LESSON PLAN FOR WINTER 2021-22	
DEPARTMENT OF CIVIL ENGINEERING	
GEOTECHNICAL ENGINEERING , 3RD SEMESTER (WINTER 2021 - 22)	
lesson plan	week/month
chapter 1	week 1
Soil and Soil Engineering	
Scope of Soil Mechanics Origin and formation of soil	
Chapter 2	week 2
Soil as a three Phase system , Water Content, Density	
Specific gravity, Voids ratio, Porosity, , Q&A discussion	
Percentage of air voids, air content, degree of saturation	week 3
air voids, air content degree of saturation,	week 4
density Index,Bulk/saturated/dry/submerged density , inter relationship	
between various parameters , Numericals , Q&A discussion	
chapter 3	week 5
Water Content	
Specific gravity	
Particle size distribution Sieve analysis	week 6
wet mechanical analysis	
Particle size distribution curve and it's uses , Q&A discussion	
Consistency of soil, Atterberg's limits , plasticity index , consistency index, liquidity index , Numericals and Monthly test(october)	week 7
chapter 4	Week 8
Introduction , different type of classification of soil	
IS Classification , plasticity chart	
chapter 5	week 9
concept of permeability , Darcy' law , coefficient of permeability , Numericals	
factors affecting permeability , constant head permeability test	
falling head permeability test , Numericals	week 10
Seepage pressure , effective stress and phenomenon of quick sand , Q&A discussion	
chapter 6	
Compaction; introduction , light compaction and heavy compaction test	week 11
factors affecting compaction , optimum moisture content , maximum dry density	
different field compaction methods and their suitability	
Consolidation; introduction , difference between compaction and consolidation and Monthly test(november)	week 12
Terzaghi's model analogy method of compression showing the method of consolidation	
chapter 7	

concept of shear strength and mohr-coulumb failure theory , Q&A discussion	
cohesion , angle of internal friction, strength envelope for different type of soil	week 13
Measurement of shear strength;- Direct shear test, triaxial shear test, Q&A discussion	
unconfined compression test and vane-shear test	week 14
chapter 8	
Active earth pressure, Passive earth pressure, Earth pressure at rest.	week 15
Earth pressure in case of backfill with uniform surcharge , numericals	week 16
chapter 9	
Functions of foundations, shallow and deep foundation, different type of shallow and deep foundations with sketches and Monthly test(december)	week 17
Types of failure (General shear, Local shear & punching shear) , Q&A discussion	week 18
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	week 19
Plate load test , Q&A discussion	week 20
standard penetration test	
Revision and mock test	

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