

Subject : Soil Mechanics

Class : Third year

Hours : 3hrs (Theoretical) , 2hrs (Practical)

Objectives :

The student should understand the nature of soil , its formation , classification and engineering properties . The student should also know the behavior of soil under stresses , the effect of water flowing inside the soil , the using of soil as a construction material . The different methods used for testing the soil in laboratory and field should also be given to the student .

Week	Practical Syllabus
1	Field collection of a soil sample
2	Water content determination
3	Liquid & Plastic limits test
4	Shrinkage limit test
5	Specific gravity of soil solids
6	Total soluble salts & Organic matter content
7	Particle size analysis (Mechanical method)
8&9	Particle size analysis (Hydrometer method)
10	Classification of soil
11&12	Moisture- unit weight relationship (Compaction test)
13&14	Determination of in-place density of soil
15&16	Permeability tests (Constant & Falling head)
17&18&19	Consolidation test
20	Unconfined compression test
21	Direct shear test
22&23&24	Triaxial compression test
25&26	California Bearing Ratio test
27	Collapsing test
28&29	Swelling test
30	Relative density determination

References :

1. Soil Mechanics (Principles & Practice) / G.E. Barnes
2. Principles of Geotechnical Engineering / B.M. Das
3. Soil Mechanics and Foundation Engineering / B. Singh , S. Prakash
4. Engineering Properties of Soils and their Measurements / J.E. Bowles
5. Soil Testing for Engineers / T.W. Lamb