

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	Theoretical Syllabus
1&2	Soil formation , Types of soil
3	Geotechnical properties , Mineralogical composition
4&5&6	Weight –volume relationships , Grain size distribution , Soil classification
7&8&9	Hydraulic properties , Permeability of soil
10&11	Seepage & flow net construction
12	Effective stress & Pore water pressure
13&14&15&16	Soil stabilization , Mechanical and chemical stabilization
17&18	Contact pressure and stress distribution
19&20&21&22	Compressibility & Consolidation , Consolidation test , Settlement analysis
23&24&25&26	Shear strength of soil , Mohr-Coulomb theory , Cases of shearing tests , Types of shearing tests .
27&28	Lateral earth pressure and retaining structures
29&30	Special types of soils , Collapsing & swelling soils

References :

- 1. Soil Mechanics (Principles & Practice) / G.E.**

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- 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**