

**SYLLABUS FOR PROGRESSIVE ASSESSMENT TEST ON 12/12/2023**

**Subject:** Geotechnical Engineering (3130606)

**Sem/Branch:** 3<sup>rd</sup> Sem, Be Civil Engineering

**Exam Date/Time:** 12/12/2023 (10:45 AM Onwards)

- 1. Type of Soils, Index Properties, Inter-relationships and Soil Characterization:** Types of soil and soil formation, Geological cycle, Phase diagrams, Basic terms, Functional relationships based on index properties, Physical characterization of soil-Dry and Wet sieve analysis, Atterberg's Indices, Soil Structures, Soil Water and its types, Standard nomenclature & IS Soil Classification, Numerical. Problems/Numerical/Codes/Lab and Field Tests.
- 2. Permeability and Seepage:** Darcy's law and its validity, Factors affecting permeability, Laboratory permeability tests, Permeability of stratified soil masses, Seepage pressure, Quick condition, Flow nets
- 3. Earth Pressure & Stability of Slopes:** Types of lateral earth pressure, Rankine's Rheban's/Culmann's Graphical methods, Infinite and finite slopes, Factor of safety, Type of slope failure, Limit equilibrium method, C-analysis-method of slices, Taylor's stability number, Numerical.
- 4. Stress Distribution:** Causes of stresses in soil, Boussinesque's and Westergard's equation, Pressure Bulb, Stress distribution on horizontal and vertical planes, Stresses due to different shapes of footings, New-mark's influence chart, Numericals.

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HOD

Applied Mechanics Department