

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR

APPLIED MECHANICS DEPARTMENT

SYLLABUS FOR PROGRESSIVE ASSESSMENT TEST ON 17/09/2024

Subject: Geotechnical Engineering (3130606)

Sem/Branch: 3rd Sem, BE Civil Engineering

Exam Date/Time: 17/09/2024 (11:30 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:** 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, Numerical.
- 5.**



Subject Coordinator
Applied Mechanics Department

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HOD

Applied Mechanics Department