

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR

APPLIED MECHANICS DEPARTMENT

SYLLABUS FOR PROGRESSIVE ASSESSMENT TEST (PAT and RPAT)

Subject: Geotechnical Engineering (2930603)

Sem/Branch: Bachelor of Engineering (Part Time- PDDC)

Exam Date/Time: PAT Date: 03/09/2024 (6:30 PM Onwards) RPAT Date: 24/09/2024

- 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. Compaction & Consolidation of soil:** Definitions, differentiate between compaction and consolidation, Compaction mechanism and proctor tests, field compactions methods, factors affecting compaction, Consolidation mechanism through spring analogy, fundamental definitions, Terzaghi's one dimensional
- 4. Shear Strength of Soil:** Mohr's strength theory, Mohr- coulomb's strength theory, Modified Mohr coulomb's theory, shears parameters through lab and field tests based on drainage conditions, Numericals. Tests will be covered in lab sessions.



Subject Coordinator

Applied Mechanics Department

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HOD

Applied Mechanics Department