SHANTILAL SHAH ENGINEERNG COLLEGE, BHAVNAGAR

APPLIED MECHANICS DEPARTMENT

SYLLABUS FOR PROGESSIVE ASSESSMENT TEST

Sem/Branch: 4th Sem. PDDC Civil Engineering

Subject: Soil Mechanics -Professional Elective – I (2940605)

Exam Date/Time: 01/04/2024 (6:30 PM Onwards)

Slope Stability: Infinite and finite slopes, factor of safety, type of slope failure, stability of infinite slopes, finite slopes forms of slip surfaces, limit equilibrium method and critical stage instability analysis, effects of tension crack and submergence, C-analysis-method of slices, Taylor's stability no., use of Bishop's method.

Stress Distribution of Soils: Causes of stress in soil, geostatic stress, Boussinesque's equation, stress distribution diagrams, New-mark's influence chart Westergard's equation, contact pressure, stresses due to triangular and other loadings.

Subsurface Investigation: Objectives of exploration, planning of exploration program, soil samples and soil samplers, field penetration tests: SPT, SCPT, DCPT., Introduction to geophysical methods, bore-log and report writing.

Shear Strength: Stress-Strain relationship in soil – Failure criteria – Mohr - Coulomb's failure theory – Shear parameters under different drainage conditions – Pore pressure parameters, – Analytical predictions of pore water pressure – stress dilatancy theory – results of plain strain shear tests – Forces on shear parameters – Stress path and its applications – Rheological models.

Subject Coordinator
Dr. H. K. Sarvaiya
Applied Mechanics Department

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HOD
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