

# SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR

## APPLIED MECHANICS DEPARTMENT

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### **SYLLABUS FOR PROGRESSIVE ASSESSMENT TEST ON 15/03/2024**

**Subject:** Foundation Engineering (3160616)

**Sem/Branch:** 6<sup>th</sup> Sem, BE Civil Engineering

**Exam Date/Time:** 15/03/2024 (11:30 AM Onwards)

- 1. Foundation Classification and Soil exploration/investigation:** Types of foundation, Factors affecting the selection of type of foundations, steps in choosing types of foundation based on soil condition, Objectives and planning of exploration program, methods of exploration-depth of boring, Soil samples and samplers- Methods of sampling, field penetration tests: SPT, SCPT, DCPT. Introduction to geophysical methods, Bore log and report writing and Data interpretation.
- 2. Shallow Foundation:** Introduction, significant depth, design criteria, modes of shear failures. Detail study of bearing capacity theories by Terzaghi analysis including effects of water table.
- 3. Pile Classifications & Load Transfer Principle of Pile foundation:** Introduction, load transfer mechanism, types of piles and their function, factors influencing selection of pile, their method of installation and their load carrying characteristics for cohesive and granular soils, piles subjected to vertical loads- pile load carrying capacity from static formula, dynamic formulae (ENR and Hiley), penetration test data & Pile load test (IS 2911). Negative skin friction.

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HOD  
Applied Mechanics Department