

	<b>Applied Mechanics Department</b> Government Engineering College, Dahod-389151. <b><u>MID Semester Syllabus</u></b>	
	Subject: <b>FOUNDATION ENGINEERING</b>	
	Subject Code: : 2180609	Division: A , B
	Faculties 1. Prof B M Purohit (YKT) 2. Prof N B Umrvavia (NBU)	

Sr No	Topics
1.	<b>Selection of foundation and Sub-soil exploration/investigation:</b> 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-wash boring and rotary drilling-depth of boring, soil samples and soil samplers-representative and undisturbed sampling, field penetration tests: SPT, SCPT, DCPT. Introduction to geophysical methods, Bore log and report writing, data interpretation.
2.	<b>Shallow Foundation:</b> Introduction, significant depth, design criteria, modes of shear failures. Detail study of bearing capacity theories (Prandtl, Rankine, Terzaghi, Skempton), bearing capacity determination using IS Code, Presumptive bearing capacity. Settlement, components of settlement & its estimation, permissible settlement, Proportioning of footing for equal settlement, allowable bearing pressure. Bearing capacity from in-situ tests( SPT, SCPT, PLATE LOAD), Factors affecting bearing capacity including Water Table., Bearing capacity of raft/mat foundation as per codal provisions, Contact pressure under rigid and flexible footings. Floating foundation. Types of pavements & its design
3.	<b>Pile foundations :</b> 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).

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 Applied Mechanics Department