

Devi Ahilya University Indore, India Institute of Engineering & Technology				III Year B.E. (Civil Engineering) (Full Time)			
Subject Code and Name	Instruction Hours per Week			Credits			
	L	T	P	L	T	P	Total
6VLRE1: Geotechnical Engineering – II							
Duration of Theory Paper: 3 hours	3	1	2	3	1	1	5

Course Objectives:

1. To Familiarize the students with a basic understanding of the essential steps involved in a geotechnical site investigation.
2. To Introduce to the students, the principal types of foundations
3. To learn factors governing the choice of the most suitable type of foundation for a given solution
4. To learn the procedures used for bearing capacity estimation,
5. To know about the determining earth pressure and concept on stability of slope

Prerequisite(s): Geotechnical Engineering - I.

COURSE CONTENTS

Unit - I

Shallow Foundations: Type of foundations shallow and deep. Bearing capacity of foundation on cohesion less and cohesive soils. General and local shear failures. Factors effecting B.C. Theories of bearing capacity - Prandle, Terzaghi, Balla, Skempton, Meyerh of and Hansan. I.S. code on B.c. Determination of bearing capacity. Limits of total and differential settlements. Plate load test.

Unit - II

Deep Foundation: Pile foundation, Types of piles, estimation of individual and group capacity of piles in cohesion less and cohesive soils. Static and dynamic formulae. Pile load test, Settlement of pile group, Negative skin friction, under- reamed piles and their design. Piles under tension, inclined and lateral load Caissons. Well foundation. Equilibrium of wells. Analysis for stability tilts and shifts, remedial measures.

Unit - III

Soil Improvement Techniques: Compaction. Field and laboratory methods, Proctor compaction tests, Factors affecting compaction. Properties of soil affected by compaction. Various equipment for field compaction and their suitability. Field compaction control. Lift thickness.

