

**MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY**

FRM-001/00QSP-004

TENTATIVE TEACHING PLAN

Dec.01.2001

DEPARTMENT/INSTITUTE/DIRECTORATE: CIVIL ENGINEERINGName of Teacher: **Prof. Dr. Aneel Kumar/Engr. Ali Raza Lashari**

Year: 3rd

Semester: 6th

Subject: **Soil Mechanics**

Course Code: CE326

Batch: 20CE (A+C)

Semester Starting Date: 03-07-2023

Semester Suspension Date: 20-10-2023

Course Learning Outcomes (CLOs):

Upon successful completion of the course, the student will be able to:

CLO No.	Description	Taxonomy level	Associated PLO
1	DETERMINE index properties of soils and to Practice classification of soils.	C3	4
2	ANALYZE the range of soil related problems especially those involving flow of water through soils and consolidation settlement of soils.	C4	4

Sr#	Description of Topic	CLO's	No. of Lectures Required
1.	Introduction to the subject.	1	1
2.	Soil as a construction material and necessity for studying soils	1	1
3.	Soil mechanics problems, soil and rock formation and Types of soils.	1	2
4.	Three phase Diagram. Mass volume relationships.	1	1
5.	Physical properties of soil: Water content, voids ratio, porosity, degree of saturation,	1	2
6.	Specific gravity, density, air content and percentage air voids.	1	1
7.	Functional relationships- Related problems.	1	2
8.	Determination of water content and specific gravity in the laboratory.	1	2
9.	Soil consistency, plasticity, states and limits of consistency and plasticity index.	1	2
10.	Determination of Atterberg's limits. Related problems.	1	2
11.	Particle size distribution and Sieve analysis.	1	2
12.	Stroke's law and hydrometer analysis.	1	1
13.	Soil classification systems.	1	2
14.	Problems related to Soil classification.	1	2
15.	Modes of occurrence of water in soils. Capillary water.	2	1
16.	Stresses in a soil mass-Effective stress and pore water pressures.	2	2
17.	Effective stresses in a saturated soil with seepages- Related problems.	2	2
18.	Darcy's law, factor affecting permeability.	2	2
19.	Laboratory and field determination of coefficient of permeability.	2	2
20.	Problems related to field permeability.	2	2
21.	Seepage pressure- Hydraulic gradient and flow net theory.	2	2
22.	Quick Sand condition and Liquefaction.	2	2
23.	Mechanics of consolidation, Term used in consolidation.	2	2
24.	Theory of one-dimensional consolidation, assumptions and validity.	2	2
25.	Consolidation test, graphical representation of data and determination of test results.	2	2
26.	Normally and over Consolidated clay. Over consolidation ratio.	2	2
27.	Related problems on Consolidation.	2	2
	Total Lectures		48

Signature of Teacher: 

Dated: 03-07-2023

Remarks of DMRC: APPROVED

Signature of Chairman: 

Dated: 01/08/2023