



SEMBODAI RUKMANI VARATHARAJAN ENGINEERING COLLEGE
SEMBODAI - 614809
BACHELOR OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
LESSON PLAN

Sub.Code:CE6405

Branch / Year / SEM: CIVIL/II/ IV

Sub.Name:SOIL MECHANICS

Batch: 2014-2018

Staff Name:M.ANBARASAN.,B.E.,

Academic Year: 2015-2016(EVEN)

UNIT	TOPICS	BOOKS FOR REFERENCE	NO. OF HOURS REQUIRED	TEACHING METHODOLOGY
UNIT I: SOIL CLASSIFICATION AND COMPACTION				
1	Nature of soil – phase relationships	R4	1	PPT
	Soil description and classification	R4	1	PPT
	Index properties of soils	R4	1	BLACK BOARD
	BIS Classification system	R4	1	BLACK BOARD
	Soil compaction	R4	2	BLACK BOARD
	comparison of laboratory and field compaction methods	R4	2	BLACK BOARD
	Factors influencing compaction behaviour of soils.	R4	1	BLACK BOARD
UNIT II: SOIL WATER AND WATER FLOW				
2	Soil water – static pressure in water	R4	1	BLACK BOARD
	Effective stress concepts in soils, capillary stress	R4	1	BLACK BOARD
	Permeability measurement in the laboratory	R4	1	PPT
	Permeability measurement in field	R4	2	BLACK BOARD
	factors influencing permeability of soils	R4	2	BLACK BOARD
	Seepage – introduction to flow nets	R4	1	PPT
	Simple problems. (sheet pile and weir).	R4		BLACK BOARD

UNIT III : STRESS DISTRIBUTION AND SETTLEMENT

3	Stress distribution - soil media	R4	1	BLACK BOARD
	Boussinesq theory	R4	1	BLACK BOARD
	Use of Newmarks influence chart	R4	1	BLACK BOARD
	Components of settlement	R4	2	PPT
	Terzaghi's one dimensional consolidation theory	R4	1	BLACK BOARD
	Computation of rate of settlement	R4	2	BLACK BOARD
	Influencing compression behaviour of soils.	R4		PPT

UNIT IV : SHEAR STRENGTH

4	Shear strength of cohesive soil	R4	1	PPT
	Shear strength of cohesion less soil	R4	1	PPT
	Mohr – Coulomb failure theory	R4	2	BLACK BOARD
	Measurement of shear strength, direct shear	R4	1	BLACK BOARD
	Tri axial compression	R4	1	BLACK BOARD
	UCC and Vane shear tests	R4	1	BLACK BOARD
	Pore pressure parameters	R4	1	BLACK BOARD
	cyclic mobility Liquefaction	R4	1	BLACK BOARD

UNIT V : SLOPE STABILITY

5	Slope failure mechanisms	R4	1	PPT
	Types - infinite slopes – finite slopes	R4	1	BLACK BOARD
	Total stress analysis for saturated clay	R4	2	BLACK BOARD
	Friction circle method	R4	2	BLACK BOARD
	Use of stability number	R4	2	BLACK BOARD
	slope protection measures.	R4	1	BLACK BOARD

REFERENCE:

1. McCarthy D.F. "Essentials of Soil Mechanics and Foundations". Prentice-Hall, 2002.
2. Coduto, D.P. "Geotechnical Engineering – Principles and Practices", Prentice Hall of India Pvt.Ltd, New Delhi, 2002.
3. Das, B.M. "Principles of Geotechnical Engineering". Thompson Brooks / Coles Learning Singapore, 5th Edition, 2002.
4. Punmia, B.C. "Soil Mechanics and Foundations", Laxmi Publications Pvt. Ltd., New Delhi, 2005.
5. Palanikumar. M, "Soil Mechanics", Prentice Hall of India Pvt. Ltd, Leaning Private Limited, Delhi, 2013.
6. Craig. R.F., "Soil Mechanics". E & FN Spon, London and New York, 2007
7. Purushothama Raj. P., "Soil Mechanics and Foundation Engineering", 2nd Edition, Pearson Education, 2013

TEXT BOOK:

1. Murthy, V.N.S., "Soil Mechanics and Foundation Engineering", CBS Publishers Distribution Ltd., New Delhi. 2007
2. Gopal Ranjan and Rao A.S.R. "Basic and Applied soil mechanics", Wiley Eastern Ltd, New Delhi (India), 2000.
3. Arora K.R. "Soil Mechanics and Foundation Engineering", Standard Publishers and Distributors, New Delhi, 2002.

STAFF INCHARGE**CLASS INCHARGE****HOD**