Year & Sem: E2S1	Course Code: CE2204	Course Name: **Foundation Engineering**	No. of Credits: 4	L	T&PS	P
				2	2	0

UNIT-I

Introduction and examples of foundation problems

Characterization of ground: Site investigations, methods of drilling, sampling, In-situ test - SPT, CPT, plate load and dynamic tests, groundwater level, etc

UNIT-II: Bearing capacity:

Types of shear failures, correction factors, ultimate and allowable stresses, Settlements of foundations, immediate, consolidation and creep settlements

UNIT-III:Shallow Foundations:

Isolated, combined, mat, raft foundations etc., contact pressure distributions

UNIT-IV:Deep Foundations:

Piles, pile groups, Types of pile foundations, methods of installation, shaft and base resistances, down drag, negative skin friction, pile load tests, Limit State Design, stability and serviceability states, load and strength factors

UNIT-V: Earth Pressures:

Coulomb and Rankine approaches, c-ø soils, smooth and rough walls, inclined backfill, depth of tension crack, Earth retaining structures - gravity, cantilever, counter fort, reinforced earth, etc

UNIT-VI: Stability of slopes:

Methods, limit equilibrium method, method of slices and simplified Bishop method, factors of safety

References/Text Books:

1. Foundation Analysis and Design, By: Joseph E. Bowles., Fifth Edition, 2001 print, The McGraw Hill Companies
2. Principals of Geotechnical Engineering, By: Braja M. Das., Fifth edition, First reprint 2002, low price edition, Thomson learning Inc
3. Basic & Applied Soil Mechanics, By: GopalRanjan / Rao A.S.R. 2003 print, New Age International Pvt Ltd.

Lecture Plan: Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations.

Video Lectures (Web Links):

1. RGUKT-Intranet