Course syllabus

Department of Civil Engineering, Indian Institute of Technology Madras

CE5680 - Soil Structure Interaction Analysis

Credit Distribution: C:9 L:3 T: P: E: O:6 TH

Course Type: Theory

Description: Constitutive relations, Stresses and displacements in soils, solids andstructures, Mechanics of soil-structure interaction, Concepts of continuummechanics, Fundamentals of soil plasticity.Beams and plates on elastic foundation, Elastic and elastoplasticanalyses of raft foundations. Analysis of axially and laterally loaded singlepile and pile groups, Pileâ€“cappilesoil interaction, Static interactionanalysis of structures founded on shallow and deep foundations,Behaviour of piledraftfoundations.Dynamics of foundations: Foundation input motion, Foundation embedded in a layered halfspace, Seismic soil structure interaction analysis in time domain for buildings and bridges.Examples and Case studies.

Course Content: Content is given in 'Objectives' section

Text Books : NIL

Reference Books : NIL

Prerequisite: NIL

Prepared in January 2021