



CE 222 Jan 3:0

Fundamentals of Soil Behaviour

Instructor

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Email:

Department: Civil Engineering

Course Time:

Lecture venue: Civil Engineering

Detailed Course Page:

Announcements

Brief description of the course

The course is useful to students of Civil Engineering & Earth Sciences as it teaches them the role of micro-structural features (inter-particle forces, fabric, suction, mineralogy) in governing the behaviour of soils at macro-level (deformation, hydraulic conductivity)

Prerequisites

Nil

Syllabus

Identification and classification of; clay minerals, expansive and collapsing soils; Concepts and measurements of matric and osmotic suction, Role of inter-particle forces and suction in effective stress, Role of clay mineralogy, inter-particle forces and suction in volume change, hydraulic conductivity and shear strength of soils

Course outcomes

Students learn about soil mineralogy, type and formation of soils, mechanical response of soils to changes in physico-chemical environment

Grading policy

50 % for mid-term, 50 % for final

Assignments

1-2 per semester

Resources

Mitchell, J. K. Fundamentals of Soil Behaviour, Wiley, 2005.

Yong, R. N. and Warkentin, B. P. Soil Properties and Behaviour, Elsevier, 1975,

Lu, N. and Likos, W.J. Unsaturated Soil Mechanics, Wiley, 2004

Fredlund, D.G. and Rahardjo, H., Fredlund, M.D. Unsaturated Soil Mechanics in Engineering Practice, Wiley, 2012

Nelson, J.D. and Miller, D.J. Expansive soils- Problems and Practice in Foundation and Pavement Engineering. Wiley- Interscience Pub., 1992