

November 22, 2022 – 9:30am-11:30am, 12:30pm-1:30pm, 2:30pm-4:00pm
November 23-24, 2022 – 10:00am-12:30pm, 2:00pm-4:00pm

Prof. Angelo Amorosi

Professor, Department of Structural and Geotechnical Engineering, Sapienza University of Rome

An introduction to the mechanics of soils

This 3 days course is aimed at introducing, at the post-graduate level, the basic principles of the mechanics of soils by discussing some of their experimental features and constitutive modelling strategies, with particular emphasis to clayey materials. The fundamental field equations for a two-phase medium are first derived, followed by an overview of typical experimental results and their interpretation in the frame of Critical State Soil Mechanics.

The key ingredients of plasticity theory are then introduced, first under 1D conditions and then generalised to 3D ones, aiming at providing the general theoretical setting then adopted to illustrate a wide class of plasticity-based models for soils, ranging from standard perfectly plastic ones to more advanced mixed-hardening multi-surface formulations.

Finally, an alternative constitutive approach based on thermodynamics with internal variables is introduced and its merits are illustrated with reference to different forms of elasto-plastic coupling of soils.

Program:

https://phd.uniroma1.it/web/course---an-introduction-to-the-mechanics-of-soils_ns3927EN_EN.aspx

Registration form:

https://docs.google.com/forms/d/e/1FAIpQLSeD8XLvRfyYKaRkP5kzIC23y758mabgqB2zpYjxAIXQOg3lcw/viewform?usp=sf_link