

Mon 27 Feb - Fri 14 Apr 2023 - Advanced soil mechanics D GEO-E2010

Week	Lectures: Mon & Wed (10:15 am) R2		Exercises and tutorials: Tue & Thu (10:15 am) Maari E 229, Maarintalo	
9	27.2	L1 Introduction/soil structure and microstructure	28.2	Laboratory exercise: Introduction and report. (ML,ZL, ALR)
9	1.3	L2 Real soil behaviour & advanced soil testing	2.3	Design exercise slope stability (HG)
9			Fri 3.3, 13-16	Laboratory exercise, geotechnical laboratory R124 (ML, ZL, ALR)*
10	6.3	L3 Mohr-Coulomb Model & Elastic models for soil	7.3	T1 Mohr Coulomb Model (WS, ZL)
10			7.3, 9:15	T: Q&A before test 1 (WS), TBD
10	8.3	Test 1 (L1-3) L4 Limit analysis	9.3	C1 Settlements 1 (HG, ALR)
			Fri 10.3, 13-16	Laboratory exercise, geotechnical laboratory R124 (ML, ZL, ALR)*
11	13.3	L5 Slope Stability	14.3	C2 Settlements 2 (HG, ALR)
11	15.3	L6 Earth pressures & retaining walls	16.3	C3 Sheet pile wall (HG, ALR)
12	20.3	L7 Water flow and seepage	21.3	C4 Water flow & seepage (WS, ZL)
12			21.3, 9:15	T: Q&A before test 2 (WS), TBD
12	22.3	Test 2 (L 4-7) L8 Introduction to Critical State Soil Mechanics.	23.3	T2 Critical state soil modelling (WS, ZL)
13	27.3	L9 Modified Cam Clay Model	28.3	T3 Modified Cam Clay Model (WS, ZL)
13	29.3	L10 SCLAY-1 model	30.3	T4 Modified Cam Clay Model and SCLAY1 (WS, ZL)
13			30.3	Deadline for the return of the laboratory exercise (ML, ZL, ALR)
14	3.4	L11 Risk-based design	4.4	T: Q&A before test 3. (WS), TBD . Soil – structure interaction (intro)
14	5.4	Test 3 (L 8-11) L12 Interaction between soil and structures	13.4!	C5 Soil - structure interaction (WS, ZL)
14			14.4!	Deadline for return of the design exercise (HG)

***There may be an extra laboratory session on the 10th of March organised in the case of a large number of students attending the course. Changes possible, e.g. 3D vs 2D limit analysis example or CO2 emission calculation example may be included**

Teachers: WS – Wojtek Sołowski, HG – Henry Gustavsson, ML – Monica Löfman, ZL – Zhongsen Li, ALR – Alejandra Lopez Ramirez. **Symbols:** L – lecture, C – calculation exercise, T – tutorial, TBD – to be decided on the first lecture whether the session takes place.

Course grading: 1/2 lecture (based on 3 tests), 1/6 lab (based on the lab report and attendance), 1/6 calculations exercises (C1-C5, equal weight), 1/6 design exercise (based on the submitted design).

All classes will be held on campus. Lectures will be recorded, but parts of the lectures in which blackboard is used may be not available. Participation in the exercises and tutorial is compulsory and absence without good reason may lead to failing the course. Participation in the lectures is highly recommended, as large parts of the lectures may be interactive or related to solving problems / answering questions on the blackboard.

Please **follow MyCourses.aalto.fi** for the announcements and updates, as all the changes to the schedule will be communicated through the MyCourses system.