

ME-705

**Experimental Geomechanics**

Ferrari Alessio

Cursus	Sem.	Type
Mechanics		Opt.

Language of teaching	English
Credits	1
Session	
Exam	Oral presentation
Workload	30h
<b>Hours</b>	<b>14</b>
Courses	10
TP	4
<b>Number of positions</b>	

**Frequency**

Every 2 years

**Remark**

Next time : Fall 2023

**Summary**

The aim of the course is to provide the students with a detailed description of the modern experimental techniques for testing geomaterials. Techniques and apparatuses are presented to test materials under a variety of situations, including non-isothermal and partially-saturated conditions.

**Content**

1. Introduction
2. Fundamentals of data acquisition
3. Recall on mechanical testing (advanced triaxial testing)
4. Multiphase testing of geomaterials
  - 4.1 Experimental methods for partially saturated soils
  - 4.2 Techniques for suction measurement and control (liquid and vapour transfer)
  - 4.3 Gas testing
  - 4.4 Hydro-Mechanical apparatuses
5. Multiphysical testing of geomaterials
  - 5.1 Testing geomaterials in non-isothermal conditions
  - 5.2 Thermo-Hydro-Mechanical testing facilities
  - 5.3 Chemo-mechanical testing
6. Pore-scale investigation of porous materials