GEOS7AE ROCK MASSES

GEOS7AE Rock Masses	ECTS Credits : 2 Duration: 21 hours	Semester : S7

Person(s) in charge :

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Keywords : Fractures, Faults, Rock Masses, Blocks

Prerequisites : Courses GEOS7AC, GEOS7AD, or equivalent coursework

Objective :

In line with the course ST032 “Rheology of Geomaterials”, this course presents a few aspects about the deformation of bedrock at different levels, principally that of a small rock masses, but also that of the Earth’s crust. Most of the course is devoted to studying the description and the behaviour of fractured rock masses, i.e., in brief, the behaviour of the discontinuities affecting rock masses, under dry or wet conditions. The last part of the course deals with faults, their properties and they way in which they interact with the Earth’s crust.

Program and content :

• Stereographic projections
• Interpretation of small natural fractures
• Types of discontinuity and their geometric properties
• Mechanical behaviour of discontinuities and of fractured rock masses
• Analysis of the stability of boulders
• Hydromechanics of fractured rock masses
• Faults and fault tectonics

Abilities:

Levels	Description and operationnal verbs
Know	Methods allowing the description of the fractured rock mass geometry to define its mechanical behaviour
understand	What is the origin of discontinuities (faults, fractures, etc.) in rock masses and what is their impact on the thermo-hydraulic-mechanical properties of rock masses from the sample to the regional scales.
Apply	Be able to analyse the stability and mechanical evolution of rock masses
Analyse	Distinguish and analyse specificities of the hydro mechanical behaviour of fractured rock masses versus soils and superficial formations
Summarise	
Assess	

Évaluations :

☑ Written test	☐ Continuous control	☐ Oral report	☐ Project	☑ Written report