AMCO2173 Application of Soil Mechanics

[30h+22.5h exercises] 5 credits

This course is taught in the 2nd semester

Teacher(s):	Jacques De Jaeger, Alain Holeyman
Language:	French
Level:	Second cycle

Aims

Basis course introducing to future architects and civil engineers the methods of analysis and design of foundations, earth retaining structure and slopes

Main themes

Presentation of construction methods with emphasis on selection criteria

Content and teaching methods

- Earth pressure : active, at rest and passive states, Rankine and Coulomb theories (including Culhman method)
- Shallow foundations : stress distribution (Boussinesq, Newmark, Steinbrenner-Fadum), settlement analysis, sources of differential settlement.
- Spread footings : ultimate loads, standard equation of bearing capacity, generalization
- In-situ testing.
- Deep foundations : bearing capacity of an isolated vertical pile. Foundation technology, execution procedure, piles and sheet piles, anchors
- Retaining walls : principles, stability criteria for gravity and cantilever retaining walls
- Slurry walls and sheet piles : general principles, technologies, assumptions, analysis and design elements, analytical design of a cantilever sheet pile, discussion.
- Slope stability : principles, case of homogeneous dry soil (Taylor's method), general principle of digital analysis.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Pedagogy : lectures, elementary exercises
Examination : written (exercise), oral (theory)

Other credits in programs

FSA3DS/GC	Diplôme d'études spécialisées en sciences appliquées (génie civil)	(5 credits)	
GC21	Première année du programme conduisant au grade d'ingénieur civil des constructions	(5 credits)	Mandatory