



5 credits

30.0 h + 30.0 h

Q1

Teacher(s)	Pardoen Benoît ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	<p>Notions of soil formation, soil classification, physical properties, soil and water interaction, and effective stress as taught in LGCIV1031</p> <p><i>The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.</i></p>
Main themes	<p>The objectives of the course are:</p> <ul style="list-style-type: none"> • learning the soil mechanics notions which are useful for the design of geotechnical elements in a construction project, • mastering the design principles of the main geotechnical elements in a construction project: embankments, foundations and retaining structures.
Aims	<p>The course contributes to the AA developments of the program: AA1.1, AA1.2, AA4.2.</p> <p>At the end of the course, the student will be able to:</p> <ul style="list-style-type: none"> - describe the deferred compression mechanisms of a soil, - determine the soil's shear strength, - describe the rupture mechanisms of embankments, 1 - calculate the safety factor for the stability of an embankment (against sliding), - determine the bearing capacity of a shallow foundation (ULS), - calculate the settlement of a shallow foundation (SLS), - determine the bearing capacity of a deep foundation (ULS), - describe and design a retaining structure. <p>-----</p> <p><i>The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".</i></p>
Evaluation methods	The evaluation conditions will be specified during the courses.
Teaching methods	<p>Ex-cathedra teaching based on the course resources for the volume 1.</p> <p>Accompanied exercise sessions for the volume 2.</p>
Content	<p>Part I : Soil mechanics</p> <ul style="list-style-type: none"> - soil compression, - volumetric behaviour, - shear strength. <p>Part II: Geotechnical structures</p> <ul style="list-style-type: none"> - soil investigations, - embankment stability, - shallow foundations, - deep foundations, - retaining structures.
Inline resources	Will be available on Moodle.
Bibliography	Supports du cours, documentation sur Moodle.
Faculty or entity in charge	GC

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Engineering	FSA1BA	5	LGCIV1031	
Bachelor in Engineering : Architecture	ARCH1BA	5	LGCIV1031	
Minor in Engineering Sciences: Construction	LGCE100I	5		