




5.00 credits

30.0 h + 30.0 h

Q1

Teacher(s)	Rattez Hadrien ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	Geology, soil characterisation, soil and water interaction, and effective stress as taught in LGCIV1031.
Main themes	The objectives of the course are: <ul style="list-style-type: none"> <li>• Learning the soil mechanics notions which are useful for the design of geotechnical elements in a construction project,</li> <li>• Mastering the design principles of the main geotechnical elements in a construction project: embankments, retaining structures, and foundations.</li> </ul>
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <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"> <li>- Describe the deferred compression mechanisms of a soil,</li> <li>- Determine the soil's shear strength,</li> <li>- Describe the rupture mechanisms of embankments,</li> <li>1 - Calculate the safety factor for the stability of an embankment (against sliding),</li> <li>- Determine the bearing capacity of a shallow foundation (ULS),</li> <li>- Calculate the settlement of a shallow foundation (SLS),</li> <li>- Determine the bearing capacity of a deep foundation (ULS),</li> <li>- Describe and design a retaining structure.</li> </ul>
Evaluation methods	Final written exam
Teaching methods	Ex-cathedra teaching based on the course resources for the volume 1. Accompanied exercise sessions for the volume 2.
Content	Part I: Soil mechanics <ul style="list-style-type: none"> <li>• Groundwater hydrology,</li> <li>• Consolidation,</li> <li>• Volumetric behaviour,</li> <li>• Shear behaviour;</li> </ul> Part II: Geotechnical engineering <ul style="list-style-type: none"> <li>• Soil investigations,</li> <li>• Slope stability,</li> <li>• Retaining structures,</li> <li>• Shallow foundations,</li> <li>• Deep foundations.</li> </ul>
Inline resources	Available on Moodle.
Bibliography	Supports du cours, documentation sur Moodle. Course resources on Moodle.
Faculty or entity in charge	GC

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Engineering : Architecture	ARCH1BA	5		
Specialization track in Construction	FILGCE	5		
Minor in Construction	LMINOGCE	5		
Master [120] in Agriculture and Bio-industries	SAIV2M	5		