





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 | <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, retaining structures, and foundations. |
| Learning outcomes | <p>At the end of this learning unit, the student is able to : The course contributes to the AA developments of the program:</p> <ul style="list-style-type: none"> • AA1.1, AA1.2 • AA4.2 • AA5.4 <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; • 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. |
| Evaluation methods | Continuous evaluation with MCQ (Bonus) and 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 | <p>Part I: Soil mechanics</p> <ul style="list-style-type: none"> • Groundwater hydrology, • Consolidation, • Volumetric behaviour, • Shear behaviour; <p>Part II: Geotechnical engineering</p> <ul style="list-style-type: none"> • Soil investigations, • Slope stability, • Retaining structures, • Shallow foundations, • Deep foundations. |
| Inline resources | Available on Moodle. |
| Bibliography | Supports du cours, documentation sur Moodle. Course resources on Moodle. |
| Faculty or entity in charge | GC |

| Programmes containing this learning unit (UE) | | | | |
|--|---------|---------|--------------|---|
| Program title | Acronym | Credits | Prerequisite | Learning outcomes |
| Bachelor in Engineering : Architecture | ARCH1BA | 5 | |  |
| Specialization track in Construction | FILGCE | 5 | |  |
| Master [120] in Agriculture and Bio-industries | SAIV2M | 5 | |  |
| Mineure Polytechnique | MINPOLY | 5 | |  |