

4 credits


20.0 h + 15.0 h

Q1



This learning unit is not being organized during this academic year.

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| Teacher(s) | Pardoen Benoît ; |
| Language : | English |
| Place of the course | Louvain-la-Neuve |
| Main themes | <p>Laboratory testing of soils is an essential part of civil engineering projects. A laboratory-testing program is required to assess, select, and test soil specimens collected during field investigation to provide physical and mechanical properties for design and construction of foundations or other geotechnical structures.</p> <p>This course covers basics and procedures of the most common soil laboratory testing methods. Moreover, a review of relevant soil behaviour models and their input parameters are given.</p> |
| Aims | <p>Contribution of the course to the program objectives (N°) AA1.1, AA3.2, AA3.3, AA5.3, AA5.4, AA6.1</p> <p>Specific learning outcomes of the course</p> <p>At the end of the course, students will be capable of:</p> <p>1</p> <ul style="list-style-type: none"> • Describing in detail the procedures of the most common geotechnical laboratory test • Evaluating the repeatability and accuracy of experimental results.. • Identifying parameters that may affect the results of mechanical tests. • Interpreting / preparing geotechnical reports of soil characterization. • Evaluating input parameters for common soil behaviour models in geotechnical software. <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 | Exercise Reports (40%) Oral exam (60%) |
| Teaching methods | <p>The teaching is organized in lecture sessions and exercise sessions. The lectures will be given by means of slides and laboratory demonstrations. The exercise sessions will take place in the laboratory of soil mechanics and computer classrooms. Teaching material will be electronically available.</p> <p>It is mandatory that students participate to all lectures and exercise sessions, as they will continuously be evaluated through weekly reports.</p> |
| Content | <p>The course covers the following subjects:</p> <ul style="list-style-type: none"> • Particle size distribution, determination and interpretation of results. • Soil identification based on physical and chemical properties. • Determination of hydraulic conductivity coefficient. • Determination of compressibility and consolidation parameters. • Determination of shear strength parameters • Soil behaviour models: Elastic, elasto-plastic, Cam Clay |
| Inline resources | Available on Moodle. |
| Bibliography | Transparent du cours et documentation disponible en ligne. |
| Other infos | Laboratory sessions are mandatory for all students. They will take place in the Soil Mechanics Laboratory of GCE (Building Vinci). |
| Faculty or entity in charge | GC |

| Programmes containing this learning unit (UE) | | | | |
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| Program title | Acronym | Credits | Prerequisite | Aims |
| Master [120] in Civil Engineering | GCE2M | 4 | |  |