UCLouvain

# lbarc2161

*2019*

# Structural Design 2

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

| 4 credits | 40.0 h | Q2 |
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| Teacher(s) | Sottiaux Luc ; |
| Language : | French |
| Place of the course | Bruxelles Saint-Gilles |
| Main themes | This teaching unit forms part of continuous learning on structures and their behaviour.<br>• Load, overload and stresses in buildings<br>• Soil mechanics: definition, components and structure of the soil, law of fundamental behaviour, action of water, constraints and balances including earth pressures, unstable soils and landslides<br>• Direct and deep foundations<br>• Supports: slopes, retaining walls, shoring and anchors<br>Advanced study:<br>• Prefabricated structures in concrete : process of design and choice of construction system, general stability and bracing, pre-stressed flat and ribbed floor elements, joints and brackets<br>• Complex and large scale/storeyed structures: design and conditions for implementation, including foundations<br>These topics are studied with the aim of experiencing the professional practice of the engineering consultant in the field of building stability. |
| Aims | **Specific learning outcomes:**<br>By the end of this teaching unit, students are able to<br>• *describe and critically analyse the mechanical working of building structures as a driver of an efficient work of architecture.*<br>• *assess the specific issues raised by the design of a structure so as to make sensible, coherent and rational choices.*<br>• *assess the technical and construction principles to be developed for large scale structures; assess the methods and conditions of implementation.*<br>• *analyse and make use of technical documents.*<br>• *enter into a professional dialogue with an engineer using knowledge of structures rigorously : communicate an architectural project with the use of plans, presentations or other documents adapted with a view to posing questions about the project and developing it.*<br>1<br>**Contribution to the learning outcomes reference network:**<br>**Use the technical dimension**<br>• *Be familiar with and interpret the main technical principles of construction*<br>• *Be able to apply the various basic technical principles in producing a work of architecture*<br>**Make committed choices**<br>• *Understand the merits of an idea which can lead to the objectives to be achieved by the project; follow through with determination, even by means of a modest intervention, the implementation of this idea and the achievement of these objectives*<br>- - - -<br>*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".* |
| Evaluation methods | **Due to the COVID-19 crisis, the information in this section is particularly likely to change.**<br>Oral examination |
| Teaching methods | **Due to the COVID-19 crisis, the information in this section is particularly likely to change.**<br>Course in auditoria. These activity is in the form of contact hours. |

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| Content | These activity consists in analysis and structural design of buildings (see Main Topics). |
| Bibliography | Notes de cours rédigées par le professeur |
| Faculty or entity in charge | LOCI |

## Programmes containing this learning unit (UE)

| Program title | Acronym | Credits | Prerequisite | Aims |
|---|---|---|---|---|
| Master [120] in Architecture (Bruxelles) | ARCB2M | 4 | | |