UCLouvain

lbarc1361

2020

Structural Design 1

Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

4 credits	40.0 h	Q2

Teacher(s)	Rondeaux Jean-François ;
Language :	French
Place of the course	Bruxelles
Prerequisites	*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.*
Main themes	This teaching unit forms part of the continuous process of learning about structures and their behaviour. • Eurocodes • Loads, overloads and combinations of actions and stress • Ultimate and serviceability limit states • Structures in masonry • Structures in concrete and reinforced concrete
Aims	Specific learning outcomes: By the end of the course, students will be able to • understand and put forward a structural logic for a building. • understand and carry out lowering the loads in a building to the foundations. • understand the behaviour of a material according to its environment. • understand the approach to structures in reinforced concrete. • understand the technical documents linked to structures in reinforced concrete. **Contribution to the learning outcomes reference framework:** 1 With regard to the learning outcomes reference framework of the Bachelor's degree in Architecture, this teaching unit contributes to the development, the acquisition and the assessment of the following learning outcomes: **Make use of other subjects** • Make use of other subjects to ask questions about the design and implementation of an architectural project **Use the technical dimension** • Observe and assess the main construction principles of a building • Be able to apply the various basic technical principles in a producing a work of architecture - - - - *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".*
Content	This course is devoted to the structural design of buildings in strong interaction with the architectural design. Three aspects are developed: (1) Principles of **spatial arrangement** of the load-bearing elements. (2) Principles of **dimensionning** of these elements. (3) Specificities of implementation on site.
Bibliography	Bjorn N. Sandaker, Arne P. Eggen, Mark R. Cruvellier, *The structural basis of architecture,* Oxon : Routledge, 2011. *ABC du ciment et du béton,* Ed. J.P. Jacobs, Bruxelles, 2005. David Phillips, Megumi Yamashita, traduction Daniel Lecointre, *Détails d'architecture en béton : plans, coupes, élévations*, Paris : Le Moniteur, 2014
Faculty or entity in charge	LOCI

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Architecture (Bruxelles)	ARCB1BA	4	LBARC1261 AND LBARC1262	🔍