


4.00 credits

30.0 h + 15.0 h

Q2

Language :	English > French-friendly
Place of the course	Bruxelles Saint-Gilles
Main themes	This teaching unit makes it possible to understand the structural logic of a building or several existing buildings in their geographical, historical and cultural context and to analyze their stability over time. These themes are studied with the aim of approaching the professional practice of the engineer and architect practitioner in the domain of stability of constructions in different international contexts. The course will combine theoretical teaching and applications to the project.
Learning outcomes	<p>At the end of this learning unit, the student is able to : At the end of this teaching unit, the student will be able to :</p> <ul style="list-style-type: none"> -understand the constructive and structural specificity of a building according to its geographical, temporal and cultural context, -formulate and criticize the mechanical functioning of building structures as a lever for efficient architectural production -evaluate the specific issues raised by the design of a structure in order to make reasonable, coherent and rational choices -diagnose an existing building and identify its structural, spatial and compositional qualities in terms of components and elements, -realize hypotheses of innovative construction or stabilization, restoration/renovation, rehabilitation, - imagine how a rehabilitation can become an intervention that contributes to the stabilization of a building. <p>Also, among the objectives of this EU will be the ability to work on a European territory in an international team and in English.</p> <p><i>Contribution to the LO repository:</i> Materialize a technical understanding Know and interpret the technical principles of construction Know how to bring together the various technical implications constituting an architectural production Make committed choices Be able to judge, independently, the merits of an idea leading to the objectives to be achieved by the project; pursue with determination, even by a modest intervention, the realization of this idea and the achievement of these objectives</p>
Evaluation methods	<p>Each student's final rating is the average of two ratings. The first evaluation concerns structural design work on a design problem assigned by the teacher at the beginning of the course. This work can be done in groups. The second evaluation concerns a written examination of the topics carried out in the classroom. On both assessments, the teacher sets a minimum threshold of 6/20 below which the student cannot have a positive final assessment.</p> <p>Due to the current health crisis, the written exam could be conducted in the presence or online, or it could be replaced with an oral examination (online).</p>
Teaching methods	<p>The course is composed of a part of ex-cathedra lectures and a part of practical classes.</p> <p>In the ex-cathedra part of the course, the lecturer will examine contemporary architectural projects (Mies Van der Rohe, Louis Kahn, Renzo Piano, Toyo Ito, Junya Ishigami and others) in two-hour in-depth lectures on each project. Starting with individual architectural projects, theoretical recalls and in-depth discussions of structural design issues will be carried out.</p> <p>In the practical part, students will be assisted in the critical analysis of an architectural project to be analyzed for the final exam. Presentations will be arranged and all students will be able to participate in the discussions.</p> <p>Depending on faculty availability, international seminars may be organized in collaboration with professors from other schools of architecture.</p>
Content	<p>This course aims to analyze several contemporary architectural projects from multiple aspects: architectural design, structural design and technology, in order to better understand the process of designing a quality building.</p> <p>Reasoning about load path, structural decomposition and structural hierarchy, and using simple calculations, we will justify the logic of the structural system (in relation to architectural choices) and the element dimensions.</p>

	Analyzing these aspects, structural mechanics concepts necessary for the design of a structure will be introduced or reviewed, and verification design methods for reinforced concrete, steel, and wood structures will be exposed.
Faculty or entity in charge	LOCI

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Architecture (Tournai) [International Master - in English]	ARCT2M	4		
Master [120] in Architecture (Bruxelles) [International Master - in English]	ARCB2M	4		