

5.00 credits

30.0 h + 30.0 h

Q1

Teacher(s)	Faux Pascaline ;
Language :	French
Place of the course	Tournai
Prerequisites	<i>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.</i>
Main themes	<p>This course trains students to understand and analyze the behavior of architectural structures. It introduces to fundamental concepts to:</p> <ul style="list-style-type: none"> <li>Analyze simple structures using tools from statics and material resistance,</li> <li>Collaborate effectively with structural engineers.</li> </ul>
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b>  <b><u>Specific Learning Outcomes</u></b></p> <p>By the end of this course, students will be able to:</p> <ul style="list-style-type: none"> <li>Apply the fundamental principles of mechanics to isostatic plane structures,</li> <li>Produce a static diagram of a structure under a given load,</li> <li>Use the principles of equilibrium and elasticity to calculate reactions at supports, internal forces, stresses, and associated deformations,</li> <li>Describe instability phenomena in a structure,</li> <li>Describe the mechanical properties of common materials,</li> <li>Analyze and determine the behavior of various types of plane structures,</li> <li>Assess the impact of hyperstaticity on structural behavior,</li> <li>Formulate overall stability conditions for a structure,</li> <li>Determine the loads acting on a building and analyze their transfer to the foundations,</li> <li>Communicate effectively with the structural engineer regarding stability.</li> </ul> <p><b><u>General Learning Outcomes</u></b></p> <p>In line with the program's learning outcomes (LOs), this course contributes to the development and acquisition of the following LOs:</p> <ul style="list-style-type: none"> <li>LO3.1 Acquire and explain the physical and physiological principles related to architecture.</li> <li>LO3.3 Acquire and apply scientific and technical knowledge to realize an architectural project.</li> <li>LO4.1 Learn and explain the concepts and methods of scientific disciplines.</li> <li>LO4.3 Learn and apply the content of artistic or scientific disciplines to enrich the architectural project.</li> </ul>
Bibliography	"Faire tenir, Structure et architecture", Marc Leyral, Editions de La Villette, 2021 "L'art des structures", Aurelio Muttoni, Presses polytechniques et universitaires romandes, 2012
Faculty or entity in charge	LOCI

**Programmes containing this learning unit (UE)**

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Architecture (Tournai)	ARCT1BA	5	LARCT1162	