

4.00 credits

22.5 h + 30.0 h

Q1

Teacher(s)	Pelsser Yvette ;
Language :	French
Place of the course	Bruxelles Saint-Gilles
Main themes	<p>This teaching unit provides an introduction to the understanding of the mechanical working of load-bearing structures and their analysis. It forms part of the continuous process of studying the main architectural structures. This teaching unit will provide the main concepts designed to:</p> <ul style="list-style-type: none"> <li>• analyse simple linear structures by means of tools from statics and materials resistance.</li> <li>• maintain a dialogue with an engineer specialised in this field.</li> <li>• The following topics are covered:                         <ul style="list-style-type: none"> <li>• Basic concepts in mechanics: force and moment</li> <li>• Characteristics of sections: centre of gravity, quadratics, main axes of inertia</li> <li>• Balance conditions of simple isostatic structures: hypotheses, force systems, support reactions</li> <li>• Internal loads and associated constraints: assessment and quantification</li> <li>• Mechanical properties of materials and deformation.</li> </ul> </li> </ul>
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <p><b>Specific learning outcomes:</b></p> <p>By the end of the course, students are able to</p> <ul style="list-style-type: none"> <li>• apply the fundamental principles of statics in the case of flat structures subject to the action of a system of forces.</li> <li>• produce the static diagram corresponding to a simple loaded structure.</li> <li>• use graphic methods applied to questions of statics, enabling the visualisation of forces understanding of their effects on the structure being studied.</li> <li>• use analytical instruments applied to the principle of balance of a flat structure, to the calculations of the reactions at the supports, to establishing internal loads and associated constraints.</li> <li>• undertake a critical analysis of simple extended, compressed or bent structures subject to usual loading.</li> <li>• formulate the mechanical properties of common materials - steel, wood, concrete and glass : law of behaviour, fragility and ductility.</li> </ul> <p>1</p>

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Architecture (Bruxelles)	ARCB1BA	4		