

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).

3 credits	15.0 h + 30.0 h	Q1
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Teacher(s)	Buysse Martin ;Cherpion Marielle ;
Language :	French
Place of the course	Bruxelles
Main themes	<p>This course is designed to provide students with the mathematical methods used in other scientific subjects. It involves both understanding the necessary basic concepts for modelling in science and gaining a certain degree of skill in the application of calculus techniques.</p> <p>This course will also develop skills in the field of generalisation, logical thinking, rigour and lead to a good understanding of the real world, particularly through the perception of geometric objects in space.</p> <p>To do this, the following will be covered :</p> <p>A/ Pure geometry</p> <ul style="list-style-type: none"> <li>• Thales's and Pythagorus's theorems</li> <li>• Trigonometry</li> <li>• Applications : polygons, polyhedrons, etc.</li> </ul> <p>B/ Analytical geometry</p> <ul style="list-style-type: none"> <li>• Vectors in space (definition, operations, properties)</li> <li>• Analytical and parametric equations</li> <li>• Parallelism, perpendicularity, secancy, distances in space</li> </ul>
Aims	<p><b>Specific learning outcomes</b></p> <p>By the end of the course, students will be able to</p> <ul style="list-style-type: none"> <li>• break down a complex geometric figure in the plan and in space to take its measurement by making use of similarities and/or remarkable trigonometric functions.</li> <li>• establish the surface and volume of simple geometric figures with the help of basic vector operations.</li> <li>• determine the coordinates of points and the equations of rights and plans defined by their geometric position in figures inspired by buildings.</li> <li>• identify the essential properties of geometric figures and use them with clarity and rigour when solving problems of a geometric nature.</li> </ul> <p><b>Contribution to the learning outcome reference framework:</b></p> <p>1 <b>Express an architectural procedure</b></p> <ul style="list-style-type: none"> <li>• Be familiar with, understand and use the codes for representing space, in two and three dimensions</li> <li>• Identify the main elements of a hypothesis or a proposal to express and communicate them</li> <li>• Express ideas clearly in oral, graphic and written form</li> </ul> <p><b>Use the technical dimension</b></p> <ul style="list-style-type: none"> <li>• Be familiar with and describe the main technical principles of building</li> </ul> <p><b>Make use of other subjects</b></p> <ul style="list-style-type: none"> <li>• Interpret the knowledge of other subjects</li> </ul> <p>-----</p> <p><i>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".</i></p>
Bibliography	• Syllabus : Mathématique-Géométrie
Faculty or entity in charge	LOCI

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Architecture (Bruxelles)	ARCB1BA	3		