

5.00 credits

30.0 h + 30.0 h

Q2

Teacher(s)	Cherpion Marielle ;Vermer Francois ;
Language :	French
Place of the course	Bruxelles Saint-Gilles
Main themes	This course aims to reinforce the mathematical foundations essential to building physics, with a particular focus on thermal and hygrothermal studies. In addition to acquiring subject-specific knowledge, the course fosters the development of cross-disciplinary skills, including generalization and deductive reasoning, abstraction and modeling, and precision.
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <ul style="list-style-type: none"> <li>• Identify the essential properties of functions based on their graphical representation,</li> <li>• Apply fundamental concepts of functions, limits, derivatives, and integrals to solve two- and three-dimensional geometric problems,</li> <li>• Define and work with the concepts of energy, work, heat, and power,</li> <li>• Describe the different modes of heat transfer,</li> <li>• Calculate the heat transfer coefficient of a wall,</li> <li>• Quantify temperature variations and water vapor transfers within a wall in static conditions,</li> <li>• Identify risks of condensation, both surface and internal, within a wall for a given indoor and outdoor climatic scenario.</li> </ul> <p><b>General Learning Outcomes</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>• LO3.4 Acquire and explain the environmental, social, and economic consequences of construction and technical choices.</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>
Faculty or entity in charge	LOCI

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Architecture (Bruxelles)	ARCB1BA	5		