lbarc1144

2021

Mathematics - calculus

3.00 credits	15.0 h + 30.0 h	Q2

Teacher(s)	Buysse Martin ;Cherpion Marielle ;
Language :	French
Place of the course	Bruxelles Saint-Gilles
Main themes	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. 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. To do this, the following will be covered: • functions of one variable • limits and continuity • derivatives and optimisation • simple integrals and calculus of surfaces/moments • ordinary differential equations.

Learning outcomes	**At the end of this learning unit, the student is able to :**
	
	    Specific learning outcomes:
	    By the end of the course, students will be able to
	
	      • identify the essential properties of functions from their graphic representation.
	      • construct curves overall plan which meet general conditions in position and selective conditions in junction, parallelism and/or perpendicularity by making use of basic concepts of function, limits and derivatives or techniques for the resolution of first order separable and/or linear ordinary differential equations.
	      • optimise defined lengths, surfaces or volumes in the framework of bi- or tri-dimensional geometric problems by making use of basic concepts of function, limits and derivatives.
	      • calculate a surface defined by elementary curves in the plan by breaking it down to an infinite sum of surfaces of rectangles on one hand, and by calculating the primitive function defining the curve on the other.
	
	1 **Contribution to the learning outcome reference framework:**
	    Express an architectural procedure
	
	      • Be familiar with, understand and use the codes for representing space, in two and three dimensions
	      • Identify the main elements of a hypothesis or a proposal to express and communicate them
	      • Express ideas clearly in oral, graphic and written form
	
	    Use the technical dimension
	
	      • Be familiar with and describe the main technical principles of building
	
	    Make use of other subjects
	
	      • Interpret the knowledge of other subjects

Bibliography	• Syllabus : Mathématique-Analyse
Faculty or entity in charge	LOCI

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Architecture (Bruxelles)	ARCB1BA	3		🔍