



4.00 credits

30.0 h + 22.5 h

Q1

Teacher(s)	Declercq Koen ;
Language :	French
Place of the course	Bruxelles Saint-Louis
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <p>The main objective of this course is to present mathematical foundations that will be essential for the understanding of important scientific approaches in economics and management sciences. The lectures emphasize the mathematical modelling and offers way to solve/approach applications or problems in economics and management. Beyond this objective, the students will be led to grasp the logical reasoning, the argumentation and / or the rigorous demonstration of the results, as well as being led to work on the verbal and written expression of their knowledge. They will learn to move from the intuitive understanding of concepts to their formal expressions, which are indispensable in the presence of a certain degree of abstraction or generalization.</p>
Evaluation methods	<p>The final grade will be an average of two grades, the weighting of which will be announced to the students at the beginning of the semester: a grade from the continuous assessment (which will however only be taken into account in the first session and if it allows the student's final mark to be increased) and a final examination grade. The final exam is written, closed book. It aims to verify the acquisition of the theoretical knowledge and the understanding of the concepts presented in the course, as well as the acquisition of techniques to solve exercises and applications. In particular, the student will be asked to apply these techniques to real mathematical and economic problems.</p>
Teaching methods	<p>a) Plenary lectures</p> <p>The lectures consist of an exposition of concepts and explanatory mechanisms. They follow the general structure of the plan detailed above and therefore also quite closely that of the reference manual mentioned below. The different parts of the material may, however, succeed one another in a slightly different order than in the reference manual.</p> <p>b) Exercise sessions (TA sessions)</p> <p>Students are divided into groups. The sessions require preparation of the students, who are responsible for preparing a selection of "core" exercises distributed on the course website at least one week before each work session. The TA session itself combines individual work (during which the assistant answers any questions) and interaction with the assistant on a series of more complex exercises.</p>
Content	<p>The topics covered are:</p> <ol style="list-style-type: none"> <li>1. Essentials of set theory</li> <li>2. Elements of logic</li> <li>3. Simple algebraic tools</li> <li>4. Analysis of real functions of one variable</li> <li>5. Single-variable optimisation</li> </ol> <p>Beyond the rigorous presentation of mathematical concepts, the course will also address and discuss numerous examples of economic applications of the latter (directly related to the second objective of the course): optimisation (revenue maximization), elasticities, etc.</p>
Bibliography	<p>Ouvrage de référence: Sydsaeter, K., Hammond, P., Strom, A. et Carvajal, A., Mathématiques pour l'économie, 5e édition, Pearson, isbn : 978-2-3260-0238-8</p>
Other infos	<p>Lecture slides are available on Moodle</p>
Faculty or entity in charge	<p>ESPB</p>

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Economics and Management	ECGB1BA	4		
Bachelor in Economics and Management (French-English)	ECAB1BA	4		
Bachelor in Economics and Management (French-Dutch-English)	ECTB1BA	4		