Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
ECON103	Mathematical Analysis	1	4	0	0	4	4

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	Objective of this course is to acquire the necessary mathematical tools to study economics. This first mathematics course includes an introduction to analysis which is one of the essential parts (the others are linear algebra and differential equations)
Content	Around the notion of function • Usual functions of one variable. • Limit, continuity for functions with one variable: indeterminate forms, infinitely large and infinitely small. Reminders about asymptotes and the intermediate value theorem. • Derivation for functions in one variable: Many economic models are based on the relationships between the derivatives of different variables. • Extrema and convexity for functions with one variable: These notions linked to derivation are very important for the resolution of many economic problems. • Local study of a function and limited developments. • Variations in economic data: absolute, relative variations, indices. • Introduction to the fundamental notion of functions of 2 variables: In the Econ104 course we will deal, in general, with the functions of several variables, which is essential for carrying out an economic analysis. Because, economic models rely on the interpretation of interactions between various economic variables. In this last chapter of ECON103, we introduce the notions of partial derivatives and differentials.
References	Sydsæter, Knut, and Peter J. Hammond. Essential mathematics for economic analysis. Pearson Education, 2008. Sydsæter, Knut, and Peter J. Hammond. Mathématiques pour l'Economie. Pearson Education, 2014. https://membres-ljk.imag.fr/Bernard.Ycart/mel/ http://exo7.emath.fr/un.html http://exo7.emath.fr/cours/livre-analyse-1.pdf

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