Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT201	Multivariable Analysis I	3	5	0	0	5	7

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	Master the notion of convergence of sequences and series (both for those of numbers and functions).
Content	Convergence of sequences and series (both for those of numbers and functions).
References	Analyse, François Cottet-Emard, de Boeck. Principes d'Analyse Mathématique, W. Rudin, Ediscience.

Theory Topics

Week	Weekly Contents
1	Series of numbers. Criterion by Cauchy on the convergence. Absolute convergence.
2	Series with positive terms. Comparison theorems. Riemann series.
3	Criteria for convergence: by Cauchy and d`Alembert.
4	Criteria for convergence: by Abel
5	Alternative series.
6	Mid-term examination.
7	Series of functions. Point-wise convergence
8	Uniform convergence of a series of functions.
9	Theorem on the double limit, Theorems on continuity, differentiability and integration.
10	Uniform convergence of series of functions.
11	Stone-Weierstrass theorem.
12	Power series.
13	Power series and their applications to some differential equations.
14	Fourier series. Trigonometric polynomials. Fourier coefficients.