Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT102	Single Variable Analysis II	2	5	0	0	5	7

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	To build, with appropriate rigour, the foundations of calculus and along the way to develop the skills to enable us to continue studying mathematics
Content	Course syllabus : Intermediate Value Theorem, Limit, Continuity, Trigonometric functions, Asymptotes, Differentiation, Mean Value Theorem, Rolle Theorem, L'Hospital Rule, Graphs of functions, Hyperbolic functions, Riemann integral- Darboux theorem, Area and volume calculation, Improper integral.
References	A First Course in Real Analysis, Sterling K.Berberian, Springer Calculus, TÜBA yayınları Mathématiques de 1er cycle, 1er année, Dixmier

Theory Topics

Week	Weekly Contents
1	Limit and continuity
2	Derivatives
3	Derivatability , l'Hopital Rule
4	Mean Value Theorem and Rolle Theorem
5	Derivative change, convex concave functions, asymptotes,
6	Graphs of Functions
7	Midterm Exam I
8	Taylor Theorem
9	Applications of Derivative
10	Integral and Primitive, Riemannian Integration
11	Theorem Combining Derivative and Integral for Continuous Functions: Fundamental Theorem of Calculus
12	Midterm exam II
13	Improper Integral
14	Applications of Integral