Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT416	Applied Mathematics	8	4	0	0	4	5

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Elective
Course Level	Bachelor Degree
Objective	The objective of this course is to study the Fixed Point Theory and Approximation Thoery with their applications in Numerical Anlaysis, Physcs and Economics
Content	(1) Banach Fixed Point Theory and its applications: Newton's Method, Cobweb Thm, Picard Thm, Gauss-Seidel Iteration, Fredholm-Volterra Thm. Applications in economics (2) Approximation Theory. Uniform and approximation in the sense of . Convexity, Haar's condition. Applications.
References	Introductory Functional Analysis with Applications, E. Kreyszig, Wiley An Introduction to Real Analysis, T. Terzioğlu, ODTÜ Fonksiyonel Analizin Yöntemleri, T. Terzioğlu, Matematik Vakfı Fonksiyonel Analiz, E. Şuhubi, İTÜ Vakfı Bir Analizcinin Defeterinden Seçtikleri, T.Terzioğlu, Nesin Matematik Köyü Real Analysis with Economic Applications, Efe A. Ök, Princeton University Press

Theory Topics

Week	Weekly Contents
1	Riemann integral
2	Riemann integral
3	Algebra of sets
4	Sigma algebra of sets
5	Mesure and extension of a mesure
6	Lebesgue mesure
7	Examination
8	Lebesgue mesure
9	Lebesgue integral
10	Lebesgue integral
11	Main integration theorems
12	Main integration theorems
13	Main integration theorems
14	Main integration theorems