Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT204	Abstract Algebra	4	5	0	0	5	7

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	To introduce some basic algebraic structures (groups and rings) and how to study them
Content	Groups as symmetry measuring constructs, subgroups, normal subgroups, quotient groups, group homomorphisms, isomorphism theorems, group actions Rings, subrings and ideals, isomorphism theorems
References	Toute l'Algebre de la Licence, Jean-Pierre Escofier Abstract Algebra: Theory and Applications, Thomas W. Judson, Robert A. Beezer http://abstract.ups.edu/aata/aata.html An Inquiry Based Approach to Abstract Algebra, Dana C. Ernst https://danaernst.com/teaching/mat411f20/IBL-AbstractAlgebra.pdf Cebir I - Temel Grup Teorisi, Ali Nesin https://nesinkoyleri.org/wp-content/uploads/2019/05/cebir.pdf

Theory Topics

Week	Weekly Contents
1	Notion of symmetry, definition of a group
2	Group examples, subgroups, homomorphisms, equivalence relations
3	Cosets, Lagrange's Theorem, Normal subgroups
4	Isomorphism theorems
5	Isomorphism theorems
6	Cyclic and symmetric groups
7	Group actions
8	Midterm
9	Sylow Theorems
10	Applications of Sylow Theorems
11	Classificaiton of finite abelian groups
12	Introduction to ring theory, sub rings, ideals
13	Quotient rings
14	Rings of polynomials