	Course name: MATH 217 Algebraic structures			Department: Mathematics			Semester 3	
	Methods of Education						Credit (ECTS)	
	Lecture	Recitation/ (Etud)	Lab	Exams	Homework/ Quiz	Other	Total	5
	42	0	0	38	0	70	150	
Language	English							
Compulsory/Elective	Compulsory							
Prerequisites	MATH 113 Abstract mathematics							

Course Contents

Weeks	Subjects
1	Binary operations.
2	Groups.
3	Subgroups.
4	Cyclic groups.
5	Groups of Permutations.
6	Rings.
7	Integral domains. Subrings.
8	Subrings Ideals
9	Ideals.
10	Fields: Q, R, C, Zp.
11	The concept of an isomorphism.
12	The ring of integers and the ring of polynomials over a field
13	The ring of integers and the ring of polynomials over a field: Division and Euclidean algorithms. GCD and LCM. Prime factorization
14	Quotient structures.

Course Objectives

The purpose of this course is to

- give the standard knowledge of groups, rings, and fields.
- apply the technical tools to solve the problems related to algebraic structures.

Learning Outcomes and Competences

Upon completion of this course students will be able to

- Acquires mathematical thinking skills (problem solving, generating ways of thinking, forming correspondence, generalizing etc.) and can use them in related fields.
- Can design mathematics related problems, devise solution methods and apply them when appropriate.

Textbook and /or References

Main texbooks :

1. Gallian, Contemporary Abstract Algebra, 7 ed 2010.
2. David S. Dummit, Richard M. Foote, Abstract Algebra, 3rd Edition, Wiley(2003).

	3. Fraleigh Victor, J. Katz, A first course in abstract algebra, Addison Wesley(2003).		
Assessment Criteria		If any, mark as (X)	Percentage (%)
	Midterm Exams	X	40
	Quizzes		
	Homeworks		
	Projects		
	Laboratory work		
	Other		
	Final Exam	X	60