



Kırıkkale University

GRADUATE SCHOOL OF NATURAL APPLIED SCIENCES
Mathematics (DR)

MAT8001 Algebra-1					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	MAT8001	Algebra-1	3	3	9

Mode of Delivery:

Face to Face

Language of Instruction:

Türkisch

Level of Course Unit:

Master's Degree

Work Placement(s):

No

Department / Program:

Mathematics (DR)

Type of Course Unit:

Required

Objectives of the Course:

To introduce subject of basic abstract algebra

Teaching Methods and Techniques:

Algebraic structures, Groups

Prerequisites and co-requisites:

None

Course Coordinator:

None

Name of Lecturers:

Associate Prof.Dr. İlker Akkuş

Assistants:

None

Recommended or Required Reading**Resources**

L. J. Goldstein, Abstract Algebra, Prentice-Hall, 1973.

F. Çallıalp, Örneklerle Soyut Cebir, Birsen yayınları, 2001, İstanbul.

Course Category

Mathematics and Basic Sciences : 100
 Engineering :
 Engineering Design :
 Social Sciences :

Education :
 Science :
 Health :
 Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Basic concepts		
2	Axioms of group		
3	Subgroups and cyclic groups		
4	Normal subgroups		
5	Quotient sets, quotient groups		
6	Homomorphisms		
7	Isomorphisms, automorphisms		
8	Midterm Exam		
9	Permutation groups		
10	Finite direct product		
11	Structure of finite abelian groups		
12	Sylow theorems		
13	Solvable groups		
14	P-groups, Normal series		
15	General linear group		

Course Learning Outcomes**No Learning Outcomes**

C01 Students will have acquired a sound understanding of the classification of finitely generated abelian groups
 C02 Students will have acquired knowledge of some fundamental results and techniques from the theory of finite groups

Program Learning Outcomes**No Learning Outcome**

P06 Develop strategic, political and practice plans and evaluate the results by considering the quality process in his/her area of expertise.
 P05 Develop new strategic approach and produce solutions by taking responsibility in unexpected and complicated situations in his/her area of practice.
 P10 Apply the digested knowledge and problem solving ability in the collaborations between different groups.
 P08 Produce solution and to take responsibility and to develop new strategic approaches in situations which are not predicted in his/her areas of expertise.
 P07 Have oral or written communication ability in one of the common foreign languages ("European Language Portfolio Global Scale", Level B2).
 P01 Evaluate the fundamental notions, theories and data with academic methods. Determining and analyzing the encountered problems and subjects, exchanging of ideas, improving suggestions prop
 P09 Follow scientific, social, and ethical values and to teach and to control them in the step of data collection, evaluation and announcement of them.
 P02 Expand knowledge by scientific methods and use them with scientific, social and ethical responsibility.
 P04 Transfer systematically the current developments, his/her studies to other people as verbal or written form confidently.
 P03 Define a problem and propose a solution for it, and to solve the problem, evaluate the results and apply them if it is necessary in his/her areas of expertise.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	16	3	48
Hours for off-the-c.r.stud	16	3	48
Assignments	4	20	80
Presentation	2	20	40
Mid-terms	1	20	20
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	30	30
Total Work Load			266
ECTS Credit of the Course			9

Contribution of Learning Outcomes to Programme Outcomes											
bbb											
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	

All	5	5	4	3	3	4	4	3	4	3	
C01	5	5	4	3	3	4	4	3	4	3	
C02	5	5	4	3	3	4	4	3	4	3	

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