AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Algebra I						
Course Code		MTK503		Couse Level		Second Cycle (Master's Degree)		
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		This course gives the fundamental concepts of groups.						
Course Content		Semigroups, monoids and groups, homorphisms and subgroups, cyclic groups, coset and counting, normal subgroups , quotient groups, ısomorphism theorems, symmetric groups, alternating and dihedral groups, direct products and direct sums, free abelian group, the action of group on a set, the sylow theorems and their applications.						
Work Placement		N/A						
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Individual Study, Problem Solving				
Name of Lecturer(s)		Prof. Hülya İNCEBOZ, Prof. Semra DOĞRUÖZ						

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	50
Assignment	1	20

Recommended or Required Reading

1	Algebra, T.W.Hungerfort
2	Contemporary Abstract Algebra, J.A.Gallian
3	Basic Algebra I-II, N. Jacobson
4	Basic Abstract Algebra, P.B. Bhattacharya, S.K.Jain, S.R. Nagpaul, Cambridge University Pres
5	Fundamentals of Abstract Algebra, D.S.Malik, John M.Mordeson, M.K.Sen, , The McGraw-Hill Companies

Week	Weekly Detailed Course Contents	
1	Theoretical	Semigroups, monoids and groups
2	Theoretical	Homorphisms and subgroups
3	Theoretical	Cyclic groups
4	Theoretical	Coset and counting
5	Theoretical	Normal subgroups, quotient groups
6	Theoretical	Normal subgroups, quotient groups
7	Theoretical	Isomorphism theorems
8	Theoretical	Symmetric groups
9	Theoretical	Alternating and dihedral groups
10	Intermediate Exam	Midterm
11	Theoretical	Direct products and direct sums
12	Theoretical	Free abelian groups
13	Theoretical	The action of group on a set
14	Theoretical	The Sylow Theorems
15	Theoretical	Some aplications of the Sylow Theorems
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	1	20	2	22
Midterm Examination	1	40	2	42

Final Examination	1	50	2	52
		Total Workload (Hours)		200
		[Total Workload (Hours) / 25*] = **ECTS**		8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to give fundamental properties of group theory
2	To be able to relate group theory with other fields of algebra
3	To be able to develop some theoretical approach on group theory
4	To be able to develop individual works on group theory
5	To be able to relate group theory with some other fields except algebra.

Programme Outcomes *(Mathematics Master)*

1	To be able to have an adequate theoretical and practical domain knowledge.
2	To be able to comprehend the interdisciplinary interaction associated with Mathematics.
3	To be able to use theoretical and practical domain knowledge gained in the field of Mathematics.
4	To be able to interpret knowledge from different disciplines integrating knowledge in the field of mathematics and produce new information.
5	To be able to define, analyse, model and to solve the problems by scientific methods in Mathematics.
6	To be able to conduct a math related specialistic study independently.
7	To be able to develop new strategic approaches to solve problems occurred in unforeseen and complex math-related applications by taking responsibility.
8	To be able to lead in situations that require solving problems related to the mathematics.
9	To be able to criticize his/her knowledge and skills acquired in the field mathematics.
10	To be able to transfer his/her ideas and suggestions for solutions to problems by supporting quantitative or qualitative data verbally and in writing.
11	To be able to communicate both orally and written in a foreign language.
12	To be able to use computer hardware and information technologies with software required by Mathematics.
13	To be able to contribute to the solution of the social, scientific, cultural and ethical problems related to the Mathematics, and being able to support the development of social, scientific, cultural and ethical values.
14	To be able to develop mathematics-related strategies, policies and operational plans, and to evaluate the results obtained within the framework of quality processes.
15	To be able to use his/her knowledge in the field of mathematics and practical problem-solving skills in interdisciplinary studies.

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5
P1	5	3	4	5	5
P2	5	5	4	4	5
P3	4	4	5	5	4
P4	5	4	5	5	5
P5	4	5	5	5	4
P6	3	3	3	3	3
P7	2	3	4	5	3
P11					4
P15	2	4	4	5	5