AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Noncommutaive Rings								
Course Code	MTK508		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 is suggested to students who study noncommutative rings. It gives the fundemantal concepts of noncommutative rings, Applications of Wedderburn's Theorem, Commutativity theorems,								
Course Content	Simple and primitive rings, The radical of a ring, semisimple Artinian Rings, Semisimple rings, The Density Theorem, Semisimple rings, Simple algebras, The Brauer's Groups, Maximal subfields, Some classic theorems, Representation of finite groups, polynomial identities, The Goldie's Theorem, Ultra-products and a theorem of Posner.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	50
Assignment	1	20

Recommended or Required Reading	
1	Noncommutative Rings, I.N.Herstein
2	Algebra, Hungerford
3	Topics In Ring Theory, I.N.Herstein

Week	Weekly Detailed Course Contents	
1	Theoretical	Simple and primitive rings
2	Theoretical	The radical of a ring, semisimple Artinian Rings
3	Theoretical	Semisimple rings, The Density Theorem
4	Theoretical	Semisimple rings
5	Theoretical	Applications of Wedderburn's Theorem
6	Theoretical	Commutativity theorems
7	Theoretical	Simple algebras
8	Theoretical	The Brauer's Groups
9	Intermediate Exam	MIDTERM EXAM
10	Theoretical	Maximal subfields
11	Theoretical	Some classic theorems
12	Theoretical	Some classic theorems
13	Theoretical	Representation of finite groups, polynomial identities
14	Theoretical	The Goldie's Theorem, Ultra-products
15	Theoretical	A theorem of Posner
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 illustrate radical and semisimple rings.
2	To be able to list the properties of simple algebras.
3	To be able to find the characterization of finite groups.
4	To be able to apply the ability of abstract thinking to solving problem.
5	To be able to gain the skill of interpreting some interrelations among these concepts

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	3	4	3	4	4
P2	3	4	4		4
P3	3	3	3	4	4
P4	3	4	4		
P5		4	4		
P7		4	4		
P14		3	3	4	4
P15	4	4	3	5	