AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Introduction to Gamma Rings								
Course Code	MTK579		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	The course aims to introduce and to understand the definition and fundamental notions of gamma rings which is the generalization of usual rings and the course aims to give information about the structure of gamma rings.								
Course Content	Definition of a gamma ring and examples, operator rings, the notion of an ideal and homomorphism, primeness, primitivity, simpleness, density theorem, prime radical, Levitzki nil radical, Jacobson radical.								
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	Gamma Rings, S. Kyuno, Hadronic Press Inc., Palm Habor, 1991.

Week	Weekly Detailed Course Contents	
1	Theoretical	Definition of gamma ring and some examples of gamma rings
2	Theoretical	Mutual relations of various gamma rings
3	Theoretical	Operator rings of gamma rings
4	Theoretical	Ideals and homomorphisms of gamma rings
5	Theoretical	Residue class gamma rings
6	Theoretical	Notion of primeness of gamma rings
7	Theoretical	Notion of primitivity of gamma rings
8	Theoretical	Notion of simpleness of gamma rings
9	Intermediate Exam	MIDTERM EXAM
10	Theoretical	Density theorem for gamma rings
11	Theoretical	Prime radical of gamma rings
12	Theoretical	Levitzki nil radical of gamma rings
13	Theoretical	Jacobson radical of gamma rings
14	Theoretical	Relations among radicals of gamma rings and operator rings
15	Theoretical	Relations among the various radicals of gamma rings
16	Final Exam	FINAL EXAM

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	1	22	2	24
Midterm Examination	1	40	2	42
Final Examination	1	48	2	50
			Total Workload (Hours)	200
			[Total Workload (Hours) / 25*] = **ECTS**	8
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Ability to understand the notion and fundamental properties of gamma ring, and to learn examples of some gamma rings.
2	Ability to understand the operator rings and its fundamental properties of a gamma ring.
3	Ability to know about the relations between operator rings and gamma rings.
4	Ability to determine the information about the structure of a gamma ring.
5	Ability to know about the radicals of a gamma ring.

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	4	4	4	4	4
P2	3	4	4	4	4
P3	3	4	4	4	4
P4	3	4	5	5	5
P5		4	4	5	5
P6			3	3	3
P7	3	4	4	4	4
P15	4	4	4	4	4