AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Special Rings						
Course Code	MTK642		Couse Level	Third Cycle (Doctorate Degree)			
ECTS Credit	7.5	Workload	188 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	This course gives the fundamental concepts of special rings.						
Course Content	Tensor product and free algebras, The Diamond Lemma, coproducts, maximal right rings of quotients, the two-sided and symmetric rings of quotients,the extended centroid, rings of quotients of coproducts, derivations and automorphisms, lie algebras, differential lie algebras, prime GPI-rings, semiprime GPI-rings, special GPI-rings						
Work Placement	N/A						
Planned Learning Activities and Teaching Methods			Explanation (Presentation), Individual Study, Problem Solving				
Name of Lecturer(s)							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	25
Final Examination	1	60
Assignment	2	15

Recommended or Required Reading

1	Rings with Generalized Identities, K.I. Beidar, W.S. Martindalle III, A.V. Mikhalev; Marcel Dekker, Inc. 1996

Week	Weekly Detailed Course Contents	
1	Theoretical	Tensor product and free algebras
2	Theoretical	The Diamond Lemma
3	Theoretical	Coproducts
4	Theoretical	Maximal right rings of quotients
5	Theoretical	The two-sided and symmetric rings of quotients
6	Theoretical	The extended centroid
7	Theoretical	The extended centroid
8	Intermediate Exam	Midterm exam
9	Theoretical	Rings of quotients of coproducts
10	Theoretical	Derivations and automorphisms
11	Theoretical	Lie algebras
12	Theoretical	Differential lie algebras
13	Theoretical	Prime GPI-rings
14	Theoretical	Semiprime GPI-rings
15	Theoretical	Special GPI-rings

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	2	0	20	40
Midterm Examination	1	25	2	27
Final Examination	1	35	2	37
			Total Workload (Hours)	188
			[Total Workload (Hours) / 25*] = **ECTS**	7.5

25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To give fundamental properties of some non-commutative special rings

2	To give relations between this special rings and other fields of algebra
3	To improve some theoretical approach on this special rings
4	To improve outstunding on this special rings
5	To relate this special rings with some other algebraic fields

Programme Outcomes *(Mathematics Doctorate)*

1	To be able to develop the current and advanced knowledge of mathematics domain to expertise level by an original idea or research, based on the level of its knowledge at the graduate level, and to be able to reach original definitions that will bring innovation to Mathematics.
2	To be able to comprehend the interdisciplinary interaction associated with Mathematics.
3	To be able to use and evaluate the new knowledge in the field of Mathematics with a systematic approach.
4	To be able to develop an idea, a method, a design or an application that will bring innovation to Mathematics, to use well known ideas, methods, designs or applications on a different research area, or to search, comprehend, design, adapt and apply an original subject matter.
5	To be able to criticize, analyze, synthesize and evaluate new and complex ideas.
6	To be able have high-level skills in research methods related to studies on Mathematics.
7	To be able to expand the frontiers knowledge in the field of Mathematics via generating or interpreting an original study, or publishing at least a scientific paper in national/international refereed journals.
8	To be capable of leadership in the positions that require the analyses of problems related to the field of Mathematics.
9	To be able to defend his/her original ideas among the experts in the discussion of math related issues, and to be able to communicate effectively to show his/her competence in the field of Mathematics.
10	To be able to contribute to the solution of the social, scientific, cultural and ethical problems related to the Mathematics, and to be able to support the development of social, scientific, cultural and ethical values.
11	To be able to have both oral and written communication using a foreign language.

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	5	5	4
P2	3	5	4	4	5
P3	4	5	4	5	5
P4	3	4	4	4	4
P5	3	5	5	5	4
P6	4	5	5	5	5
P7	3	3	5	4	4
P9	3	4	5	4	5