



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Commutative Rings							
Course Code		MTK507		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	7	Workload	175 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		In order to study open problems in Algebraic Geometry, commutative rings must be studied. This course aims to introduce the fundamental and general concepts of Commutative Rings.							
Course Content		Rings and ideals, Localization of rings, Modules, Exact sequences, Prime and Primary ideals, Primary decomposition, Noetherian rings and modules, Artinian rings and modules, Extension of rings, Hilbert Nullstellensatz, Dimension Theory.							
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	Commutative ring theory, H. Matsumura, Cambridge Univ. Press, 1997
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Week	Weekly Detailed Course Contents	
1	Theoretical	Rings and ideals
2	Theoretical	Localization of rings
3	Theoretical	Modules
4	Theoretical	Exact sequences
5	Theoretical	Prime and Primary ideals
6	Theoretical	Primary decomposition
7	Theoretical	Noetherian rings and modules
8	Theoretical	Noetherian rings and modules
9	Intermediate Exam	MIDTERM EXAM
10	Theoretical	Artinian rings and modules
11	Theoretical	Extension of rings
12	Theoretical	Hilbert Nullstellensatz
13	Theoretical	Hilbert Nullstellensatz
14	Theoretical	Dimension theory
15	Theoretical	Dimension theory
16	Final Exam	FINAL EXAM

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	1	10	2	12
Midterm Examination	1	32	2	34
Final Examination	1	43	2	45
Total Workload (Hours)				175
[Total Workload (Hours) / 25*] = ECTS				7

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

1	To be able to illustrate rings and ideals.
2	To be able to list the properties of modules.
3	To be able to find the characterization of Noether ve Artin rings.
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	3
P4	3	4	4		
P5		4	4		
P7		3	3	4	3
P15	4	4	3	5	

