AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Module Theory I					
Course Code		MTK609		Couse Level	Third Cycle (Doctorate Degree)		
ECTS Credit	7.5	Workload	189 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Working on the properties of advance module theory					
Course Content		The summarieses some fundamental properties of module theory, characterization of projective and injective modules with exact sequences, characterization of Artin and Noether modules, studying of radical of modules and rings and also some specific rings					
Work Placement		N/A					
Planned Learning Activities and Teaching Methods			Explanation (Presentation), Individual Study				
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 and Categories of Modules, F.W. Anderson- K.R. Fuller, Springer Verlag 1974.
2	Lectures on Modules, T.Y. Lam, Graduate Texts in Mathematics, Springer Verlag 1998.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to module theory
2	Theoretical	Cartesian products and direct sums of modules
3	Theoretical	Homomorphisms
4	Theoretical	Split exact sequences
5	Theoretical	Projective and injective modules
6	Theoretical	Length of a module
7	Theoretical	Artinian and Noetherian modules
8	Intermediate Exam	Midterm exam
9	Theoretical	Artinian and Noetherian rings
10	Theoretical	Simple and semisimple modules
11	Theoretical	Simple and semisimple rings
12	Theoretical	Radicals of modules and rings
13	Theoretical	Finitely generated modules
14	Theoretical	Von Neumann regular rings
15	Theoretical	The group ring

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	2	0	10	20
Midterm Examination	1	33	2	35
Final Examination	1	48	2	50
			Total Workload (Hours)	189
		[Total Workload (Hours) / 25*] = **ECTS**		7.5

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To remind basic facts on advanced module theory

2	Studying on the characterization of some specific modules
3	To improve some methodology on the characterization of modules
4	To constract the relations between some specific modules and other scientific fields
5	To be able to gain the skill of interpreting some interrelations among these concepts

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	4	4	4
P2	4	4	4	5	4
P3	4	4	4	5	4
P4	3	5	5	5	4
P5	3	5	5	3	4
P6	3	4	5	3	
P7	4	4	4	4	
P8	4	4	4	4	
P9	4	4	4	4	
P11	4	4	4	4	