



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Module Theory II							
Course Code		MTK610		Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit	7.5	Workload	189 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Working on some specific properties of advance module theory							
Course Content		Introduce of free modules and rank, properties of projective and injective modules, studying of flat and faitfull modules, characterization of injective modules with homological way, some dimensions on ring theory, introduce the CS-modules							
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	Free modules and rank
2	Theoretical	Projective modules and their properties
3	Theoretical	Projective modules and their properties
4	Theoretical	Injective modules and their properties
5	Theoretical	Injective modules and their properties
6	Theoretical	Injective modules and their properties
7	Theoretical	Flat modules
8	Intermediate Exam	Midterm exam
9	Theoretical	Faitfully flat modules
10	Theoretical	Homological dimensions
11	Theoretical	Injective dimensions
12	Theoretical	Global dimensions of semiprimary rings
13	Theoretical	Global dimensions of local rings
14	Theoretical	Uniform dimensions
15	Theoretical	CS-modules

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 give details of free modules and ranks
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2	To studying more about the characterization on specific modules
3	To improve the methodology by using homological algebra
4	To introduce the CS-modules as a specific modules
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	

