ESOGÜ Mathematics and Computer Sciences Department
COURSE INFORMATION FORM

SEMESTER	Fall

COURSE CODE	821617004	**COURSE NAME**	Module Theory

SEMESTER	**WEEKLY COURSE PERIOD**			**COURSE OF**			
	Theory	**Practice**	**Labratory**	**Credit**	**ECTS**	**TYPE**	**LANGUAGE**
7	3	0	0	3	5	COMPULSORY ( ) ELECTIVE (x)	Turkish

COURSE CATAGORY				
Mathematics	**Computer**			**Social Science**
x			X	

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (………)		
FINAL EXAM		1	60

PREREQUIEITE(S)	none
COURSE DESCRIPTION	Modules and Vector Spaces, Submodules and Quotient Modules, Direct Sum, Exact Sequences, Free Modules
COURSE OBJECTIVES	To give basic knowledge about module notion .
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	To give background for graduate education on algebra.
COURSE OUTCOMES	Having detailed knowledge about the notion of the Module theory and Vector Spaces.
TEXTBOOK	Algebra, An Approach via Module Theory (W. A. Adkins,S. H. Weintraub)
OTHER REFERENCES	**Abstract Algebra (D. S. Dummit, R. M. Foote)**
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS

WEEK	TOPICS
1	Abelian Groups and rings and examples
2	Modules, vector spaces and examples,
3	Modules, vector spaces and examples,
4	Submodules and examples
5	Submodules and examples
6	Quotient Modules
7	Quotient Modules
8	Mid-term
9	Module homomorphisms
10	Isomorphism theorems for modules
11	Direct sum
12	Torsion Modules
13	Exact Sequences
14	Hom(M,N)
15	Free Modules
16,17	Final

NO	PROGRAM OUTCOMES	3	2	1
1	The ability to apply knowledges of Mathematics and Computer Sciences,		x	
2	To have sufficient theoretical and practical knowledge of Mathematics at international level,	x		
3	The ability of describing, modelling and solving of mathematical problems at Mathematics and related subjects,	x		
4	The skill to solve and design a problem process in accordance with a defined target,	x		
5	Skills to analyze data, interpret and apply to other datum and using these data on computer,			x
6	The skill to use the modern techniques and computational tools needed for mathematical applications,			x
7	The skill to make team work within the discipline and interdisciplinary,		x	
8	The ability to improve oneself by following the developments on other modern, scientific and technological subjects as well as Mathematics and Computer Sciences,			x
9	The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking,		x	
10	The skill to have professional and ethical responsibility,			x
11	The skill to have consciousness for quality issues and scientific research,		x	
12	The skill to be sensitive to environmental issues related with problems and development of living area and consistent in the social relations,			x
13	Ability to solve problems in the working life faced to find an appropriate algoritms via mathematical modeling and to write computer programs,			x
14	The skill to developed design of software systems at different complex levels,			x
15	The credence of necessity of life-long learning and ability to apply the formation long-life learning.			x
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Doç. Dr. Ummahan EGE ARSLAN

Signature: **Date:**