



ESOGÜ Mathematics and Computer Sciences Department  
COURSE INFORMATION FORM

SEMESTER | Fall

<b>COURSE CODE</b>	821617031	<b>COURSE NAME</b>	Abstract Algebra with Mathematica I
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SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
7	2	2	0	3	5	COMPULSORY ( x ) ELECTIVE ( )	Turkish

**COURSE CATAGORY**

<b>Mathematics</b>	<b>Computer</b>	<b>Social Science</b>
x	x	

**ASSESSMENT CRITERIA**

	Evaluation Type	Quantity	%
	<b>MID-TERM</b>	1st Mid-Term	1
2nd Mid-Term			
Quiz			
Homework			
Project			
Report			
Others (.....)			
<b>FINAL EXAM</b>		1	50

<b>PREREQUIEITE(S)</b>	None.
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<b>COURSE DESCRIPTION</b>	Installation of Mathematica, Basic Concepts, Lists, 2 Dimensional Graphics, Control Phrases, Loops, Permutation Concept, Limiting the shapes with symmetrical groups, What is Group?, Cosets and Normal sub groups, Groupoids package use, Morphoids package use.
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<b>COURSE OBJECTIVES</b>	Presenting main concepts and techniques in the content of the lesson, improving students' software writing skills by practising these concepts and techniques.
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<b>ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION</b>	Gaining analytical thinking, problem solving and modelling skill.
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<b>COURSE OUTCOMES</b>	Having sufficient knowledge about Mathematica and Abstract Algebra ;the ability of modelling and solving the problems by using the theoretical and applied information.
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<b>TEXTBOOK</b>	Exploring Abstract Algebra With Mathematica, Allen C. Hibbard, Kenneth M. Levasseur.
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<b>OTHER REFERENCES</b>	1) Schaum's Outline Of Mathematica, Eugene Don. 2) The Student's Introduction To MATHEMATICA, Bruce F. Torrence, Eve A. Torrence.
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<b>TOOLS AND EQUIPMENTS REQUIRED</b>	None.
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## COURSE SYLLABUS

WEEK	TOPICS
1	Installation of Mathematica
2	Basic Concepts
3	Lists
4	2 Dimensional Graphics
5	Control Phrases
6	Loops
7	Permutation Concept
8	Midterm
9	Limiting the shapes with symmetrical groups
10	What is Semigroup
11	What is Group?
12	Cosets and Normal sub groups
13	Groupoids package use
14	Morphoids package use
15,16	Final Exam

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 algorithms 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):**

**Signature:**

**Date:**