ESOGÜ Mathematics and Computer Sciences COURSE INFORMATION FORM

COURSE CODE	821616007	COURSE NAME	Applied Algebra

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
6	3	0	0	3	5	COMPULSORY ( ) ELECTIVE (x)	Turkish

COURSE CATAGORY				
Mathematics	Computer			Social Science
x	x			

ASSESSMENT CRITERIA

MID-TERM	Evaluation Type	Quantity	%
	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (………)		
FINAL EXAM		1	50

PREREQUIEITE(S)	None.
COURSE DESCRIPTION	Cryptography, Maple and Abstract Algebra.
COURSE OBJECTIVES	Studying basic notions of Abstract Algebra with Maple and having general information about Cryptography.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Preparing students for more advanced works in Algebra & Computer Science.
COURSE OUTCOMES	Having general information about Abstract Algebra and Cryptography with Maple.
TEXTBOOK	Applications of Abstract Algebra with Maple , (R.E.Klima)
OTHER REFERENCES	Modern Algebra – An Introduction , (J.R.Durbin)
TOOLS AND EQUIPMENTS REQUIRED	None.

COURSE SYLLABUS

WEEK	TOPICS
1	Introduction
2	Block Designs
3	Error – Correcting Codes
4	BHC Codes
5	Midterm Exam
6	Reed – Solomon Codes
7	Algebraic Cryptography
8	The RSA Cryptosystem
9	The RSA Cryptosystem
10	The RSA Cryoyosystem
11	Elliptic Curve Cryptography
12	Elliptic Curve Cryptography
13	Polya Theory
14	Polya Theory
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 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): Prof. Dr. Zekeriya ARVASİ

Signature: **Date:**