ESOGÜ Mathematics and Computer Sciences Department
COURSE INFORMATION FORM

SEMESTER	Fall

COURSE CODE	821614009	COURSE NAME	Number Theory

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
4	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	The division algorithm, congurances, Euler, The Chinese Remainder and Wilson Theorem, arithmetic functions, primitive roots, quadratic reciprocity, Diophantine Equations, Jacobi and Legendre symbols,continued fractions
COURSE OBJECTIVES	These topics will be introduced and various applications will be given to show how they relate to the subject of number theory
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	
COURSE OUTCOMES	Having detailed knowledge about the Number theory.
TEXTBOOK	Sayılar Teorisi ve Uygulamaları (Doç. Dr. Hüseyin Altındiş), **Elementary Number Theory and Its Application . (A.Wesley, K. Rosen)**
OTHER REFERENCES	Sayılar Teorisi Problemleri (Doç. Dr. İ.Naci Cangül, Yrd. Doç. Dr. Basri Çelik)Fen ve Eğitim Fakülteleri Öğrencileri için SAYILAR KURAMINA GİRİŞ (Matematik Vakfı Yayını)
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	The division algorithm
2	Congruances
3	The Chinese Remainder
4	Wilson Theorem
5	Arithmetic functions
6	The Chinese Remainder
7	Problem solutions
8	Mid-term
9	Arithmetic functions, , primitive roots
10	primitive roots
11	Diophantine Equations
12	quadratic congruence
13	quadratic congruence
14	Jacobi and Legendre symbols
15	continued fractions
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:**