ESOGÜ Mathematics and Computer Sciences Department
COURSE INFORMATION FORM

SEMESTER	Fall

COURSE CODE	821617002	COURSE NAME	Functional Analysis I

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			

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	Metric Spaces, Normed Spaces and Inner Product Spaces.
COURSE OBJECTIVES	Introducing to Functional Analysis.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Preparing students for more advanced works in Topology and Analysis.
COURSE OUTCOMES	Having general knowledge about the notion of the Functional Analysis.
TEXTBOOK	Koçak, Mahmut, **Fonksiyonel Analiz'e Giriş I, Nisan Kitapevi**
OTHER REFERENCES	**W, W.L., Chen,** Linear Functional Analysis **Rudin, W.,** Functional Analysis, TATA McGraW-HİLL, 1973.
TOOLS AND EQUIPMENTS REQUIRED	None.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to Metric spaces
2	Complete Metric spaces
3	Completion of a metric space
4	Sequentially compact metric space
5	Compact metric spaces
6	Normed vector spaces
7	Normed vector spaces
8	Midterm Exam
9	Linear spaces
10	Linear transformation
11	Normed linear spaces
12	Cauchy sequent in Normed spaces
13	Bounden linear yransformations
14	Finite dimentional normed spaces
15	Problem solutions
16-17	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. Mahmut KOÇAK

Signature: **Date:**