ESOGÜ Mathematics and Computer Sciences Department
COURSE INFORMATION FORM

SEMESTER	Fall

COURSE CODE	821617027	**COURSE NAME**	Integral Equations I

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		
Mathematics	**Computer**	**SocialScience**
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	First and Second Kind Linear Integral Equations Volterra Integral Equations Fredholm Equations Basic Functionsand Associated Homogeneous Integral Equations
COURSE OBJECTIVES	Giving the student the basic knowledge of the integral equations in applied mathematics in implementing other areas of interest
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	To create a base to students who want to master's degree in Applied Mathematics
COURSE OUTCOMES	Gain sufficient knowledge of Integral Equations subject, related with science and own branch; an ability to apply theoretical and practical knowledge on solving problems.
TEXTBOOK	İntegral Denklemler (Prof.Y. Aksoy) Integral Equations (M.Krasnov, A. Kiselev,G.Makeronko**)**
OTHER REFERENCES	Integral Equations and Applications (C.Corduneanu) Linear Integral Equations (W. V. Lovitt)
TOOLS AND EQUIPMENTS REQUIRED	None.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to the theory of integral equations, linear integral equation of the first kind
2	Abel's problem
3	Linear integral equation of the second kind
4	Relation between linear diff. eqn. and Volterra's integral equation.
5	Relation between linear diff. eqn. and Volterra's integral equation.
6	Types of solutios, Volterra equation
7	Solution of Fredholm's equation
8	Midterm
9	Fredholm's equation as limit of a finite system of linear equations
10	Fredholm's two fundamental relations
11	Fundamental functions
12	Associated Homogeneous Integral Equations
13	Applications of FredholmTheory
14	Applications of FredholmTheory
15	The differential equations of the problem
16	Final

NO	PROGRAM OUTCOMES	3	2	1
1	The ability to apply knowledges of Mathematics - Computer,	**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 - Computer,		**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**:Completelycontribution.				

Instructor(s): Prof. Dr. Filiz TAŞCAN

Signature:

Date: