ESOGÜ Mathematics and Computer Sciences
COURSE INFORMATION FORM

SEMESTER	Fall

COURSE CODE	821613008	COURSE NAME	Graph Theory and Applications-I

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

COURSE CATAGORY			
Mathematics	**Computer**	**Social Sciences**	
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	İntroduction to Graph theory **,** Graphs, Degree sequences, distance in graphs , Structures and representations of graphs , subgraphs, some graphs operations,graph isomorphm, paths cycles, Eulerian graphs and properties of its, Hamiltonian graphs and properties of its, Trees (characterizations and properties of trees,rooted and binary trees,…) and applications of its, spaninig trees and connectivity .
COURSE OBJECTIVES	The main of the course is to introduce the concepts and techniques involved in the basic topics listed in this lecture and to develope skills in applying those concepts and techniques to the solution of problems
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Gain the ability of problem solution.
COURSE OUTCOMES	Gain sufficient knowledge of Graphs subject, related with science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of problems.
TEXTBOOK	1. **Jonathan Gross and Jay Yellen**, Graph thery and and its applications CRC press ,1998. 2. **Chartrand, G. And Lesniak, L**.**(1996).** Graphs and digraphs Chapman & Hall.
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	

	COURSE SYLLABUS	
WEEK	**TOPICS**	
1	İntroduction to Graph theory	
2	Structures and representations of graphs , subgraphs, some graphs operations,graph isomorphm,	
3	Structures and representations of graphs , subgraphs, some graphs operations,graph isomorphm,	
4	Distance in graphs.	
5	Midterm	
6	Paths and cycles.	
7	Trees and applications of its.	
8	Eulerian graphs and properties of its	
9	Eulerian graphs and properties of its	
10	Midterm	
11	Hamiltonian graphs and properties of its	
12	Trees (characterizations and properties of trees,rooted and binary trees,…)	
13	Spaninig trees and connectivity	
14	Spaninig trees and connectivity	
15,16	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**: Completely contribution.				

Instructor(s):

Signature: **Date:**