ESOGÜ Mathematics and Computer Sciences Department
COURSE INFORMATION FORM

SEMESTER	Spring

COURSE CODE	821618030	COURSE NAME	Fundamental Groups II

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
8	2	2	0	3	5	COMPULSORY (x) ELECTIVE ( )	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	Connected Spaces, Paths and Path connected spaces, Homotopies of continuous functions, Homotopies of paths, Homotopy groups, Fundamental groups,
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 develop 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 Homotopy and Fundamental group structure , related with science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of problems.
TEXTBOOK	A First Course in Algebraic Toplogy, Czes Kosniowsky
OTHER REFERENCES	1) Topology, James R. Munkres 2) Essential Topology, Martin, D. Crossley
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS

WEEK	TOPICS
1	Homotopy
2	Homotopies of continuous functions
3	Paths and multiplication of paths,
4	Homotopies of paths,
5	Characteristics of homotopies
6	Homotopy Equivalances
7	Problem Solving
8	Midterm
9	Homotopy groups,
10	Fundamental groups
11	Problem Solving
12	Fundamental groups of product spaces
13	Fundamental group of circle
14	Examples of Fundamental group
15	Problem solving
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): Prof. Dr. İ. İlker Akça

Signature: **Date:**