ESOGÜ DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE COURSE INFORMATION FORM

SEMESTER	Spring

COURSE CODE	821616003	COURSE NAME	Algorithms

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
6	3	0	0	3	5	COMPULSORY (x) ELECTIVE ( )	Turkish

COURSE CATAGORY			
		[if it contains considerable design, mark with (√)]	
		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)	Calculus I-II,Data Structure, Computer Programming
COURSE DESCRIPTION	Builds to write tecnique programs.
COURSE OBJECTIVES	Design types of algorithms to solve real problems and studying complexity of algorithms.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Gain the ability of problem solution.
COURSE OUTCOMES	1. Writing efficient algorithms for problems 2. Learning the concept of divide and conquer algorithms 3. Learning the concept of Dynamics algorithms 4. Learning to compute the theoretical cost of algorithms
TEXTBOOK	**Brassard, G.-Bratley, P.** Algorithmics,theory and practice
OTHER REFERENCES	1 -**Mount, D.** Lecture notes: Design and Analysis of Computer Algorithms, CMSC 452. 2-**R.Sedgewick, (1983).** Algorithms, Addison-Wesley, Reading MA. 3-**Parberry, I.** , Lecture notes on Algorithms Analysis and Computational Complexity
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Basic concepts
2	Asymptotic notations
3	Solving recurrence equations
4	Analysis of algorithms for some simple problems
5	Analysis of algorithms for some simple problems
6	Recursive algorithms and their complexity
7	Examples
	Midterm
8	Divide and conquer algorithms
9	Divide and conquer algorithms
10	Dynamics programming
11	Dynamics programming
12	Comparisons divide-conquer and dynamics algorithms
13	Complexity of Sorting algorithms
14	Examples
15,16	Final exam

DİKKAT!... Aşağıdaki PROGRAM ÇIKTILARI Mühendislik için yazılmıştır. BÖLÜM kendi eğitim amaç ve hedeflerini destekleyen Program Çıktılarını belirledikten sonra bu kısım hazırlanmalıdır. ŞABLON OLARAK KULLANMAYINIZ

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): Prof. Dr. Dursun Irk

Signature: **Date:**