ANALYSIS OF ALGORITHMS

1	Course Title:	ANALYSIS OF ALGORITHMS
2	Course Code:	BM303
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	3
6	Semester:	5
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	4.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Dr. Ögr. Üyesi Metin BİLGİN
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Bilgisayar Müh. Bölüm Binası, 1. kat, oda 107 Tel.:+90 (224) 294 2792 email: gozcan at uludag.edu.tr
17	Website:	
18	Objective of the Course:	The necessary information is taught to recommend mathematical models to these derste computation problems. Algorithms, paradigms and data structures for solving computational problems are described.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

		1	Learn the concept of complexity and related notations
		2	Learn sorting and tree algorithms
		3	Learn divide conquest algorithms
		4	Learn graph algorithms
		5	Learn P,NP concepts and approximate algorithm solving
		6	
		7	
		8	
		9	
		10	

21	Course Content:	

Course Content:	

Week	Theoretical	Practice
1	Asymptotic Analysis	
2	Recurrence Equations, Divide and Conquer:	
3	Sorting Algorithms	
4	Search Trees	
5	AVL tree, Red black tree	

6	Randomized Algorithms and Quicksort	
7	Hashing, Number Theory and Cryptography Algorithms	
8	Graphs	
9	Shortest Paths	
10	Dynamic Programming	
11	Dynamic Programming algorithms	
12	Pattern Matching:	
13	String Matching	
14	NP Completeness	

22	Textbooks, References and/or Other Materials:	Cormen, Thomas, Charles Leiserson, Ronald Rivest, and Clifford Stein. Introduction to Algorithms. 3rd ed. MIT Press, 2009. ISBN: 9780262033848. Miller, Bradley, and David Ranum. Problem Solving with Algorithms and Data Structures Using Python. 2nd ed. Franklin, Beedle & Associates, 2011. ISBN: 9781590282571.
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	25.00
Total	4	100.00
Success Grade		100.00
Total		100.00
Course		

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	4.00	56.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	0	0.00	0.00
Homeworks	2	12.00	24.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	40.00	40.00
Others	0	0.00	0.00
Final Exams	1	60.00	60.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**	

	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ÖK5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives   PQ: Program Qualifications

Contrib ution Level:	1 very low	2 low	3 Medium	4 High	5 Very High