INTRODUCTION TO HEURISTIC ALGORITHMS

1	Course Title:	INTRODUCTION TO HEURISTIC ALGORITHMS	
2	Course Code:	BM5123	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	none	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Doç. Dr. GIYASETTİN ÖZCAN	
15	Course Lecturers:	yok	
16	Contact information of the Course Coordinator:	Bilgisayar müh. bölüm binası 1. kat oda 110 pinarkirci@uludag.edu.tr	
17	Website:		
18	Objective of the Course:	The objective of this course is to provide students the knowledge of Heuristic Algorithms with engineering applications.	
19	Contribution of the Course to Professional Development:	students will learn the knowledge of Heuristic Algorithms	
20	Learning Outcomes:		
		1	Will be able to have knowledge and understanding of heuristic algorithms;
		2	Will be able to solve the engineering problems using the heuristic algorithms.;
		3	Will be able to present a heuristic algorithm project;
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Introduction to heuristic algorithms	
2	Basic concepts	
3	Simulated Annealing algorithm,application examples	
4	Greedy and divide and conquer algorithms	
5	Tabu Search algorithm, application examples	

6	Genetic Algorithms	
7	Genetic Algorithms	
8	Ant Colony Algorithms	
9	Ant Colony Algorithms	
10	Application examples	
11	Differential Evolution Algorithm	
12	Artificial Immune System	
13	Artificial Immune System	
14	Application examples	

22	Textbooks, References and/or Other Materials:	Tunçhan Tura, Modern Sezgisel Teknikler ve Uygulamalari, Papatya Yayincilik, 2008. Zbigniew Michalewicz, David B. Fogel. How to Solve It: Modern Heuristics. Springer.2004.

23 Assesment

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	50.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	50.00
Success Grade		100.00
Contribution of Final Exam to Success Grade		50.00
Total		100.00

24 ECTS / WORK LOAD TABLE

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	2.00	28.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	50.00	50.00
Others	0	0.00	0.00
Final Exams	1	60.00	60.00
Total Work Load			230.00
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	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ÖK2	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ÖK3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1

LO: Learning Objectives PQ: Program Qualifications

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