ARTIFICIAL INTELLIGENCE

1	Course Title:	ARTIFICIAL INTELLIGENCE	
2	Course Code:	END6122	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	7.50	
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:	Prof. Dr. NURSEL ÖZTÜRK	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	nursel@uludag.edu.tr +90 224 2942083 Uludağ Üniversitesi, Endüstri Mühendisliği Bölümü	
17	Website:		
18	Objective of the Course:	The objective of this course is to provide students the knowledge of Artificial Intelligence and related topics with engineering applications.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Will be able to understand knowledge of the artificial intelligence and related topics
		2	Will be able to design an intelligent system with using expert system, fuzzy logic, neural network, etc.
		3	Will be able to present an artificial intelligence project
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21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Fundamental principles of artificial intelligence	
2	Expert System, Knowledge Engineering, General structure of expert system	
3	Knowledge representation techniques, Search techniques, Inference	

4	Design of expert systems, Forward chaining, Backward chaining	
5	Probability and expert systems, Application examples, Presentation of homework 1	
6	Fuzzy sets, Properties of fuzzy sets, Fuzzy set operations	
7	Fuzzy relations, Membership functions, Fuzzification	
8	Inference techniques, Defuzzification techniques	
9	Natural language, Fuzzy systems,	
10	Fuzzy systems, Application examples, Presentation of homework 2	
11	Midterm Exam, Artificial neural networks	
12	Artificial neural networks	
13	Artificial neural networks, Application examples, Presentation of homework 3	
14	Oral presentation of projects	

22	Textbooks, References and/or Other Materials:	N. Öztürk, “Artificial Intelligence Lecture Notes”. P.H. Winston, “Artificial Intelligence”. K. Parsaye, M. Chignell, “Expert Systems for Experts”. T.J. Ross, “Fuzzy Logic With Engineering Applications”. L.H. Tsoukalas, R.E. Uhrig, “Fuzzy and Neural Approaches in Engineering”. S. Haykin, “Neural Networks”.

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	10.00	140.00
Homeworks	4	3.00	12.00
Projects	1	25.00	25.00
Field Studies	0	0.00	0.00
Midterm exams	1	2.50	2.50
Others	0	0.00	0.00
Final Exams	1	3.50	3.50
Total Work Load			225.00
ECTS Credit of the Course			7.50

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Quiz	0	0.00
Final Exam	1	30.00
Contribution of Term (Year) Learning Activities to		70.00
Contribution of Final Exam to Success Grade		30.00
Total work load/ 30 hr		7.50
Measurement and Evaluation Techniques Used in the		

24 ECTS / WORK LOAD TABLE

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	5	0	0	0	0	0	5	0	0	5	0	0	0	0
ÖK2	0	0	5	4	5	0	0	0	5	0	0	5	0	0	0	0
ÖK3	0	0	0	0	0	5	5	5	0	0	4	5	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

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