ARTIFICIAL NEURAL NETWORKS									
1	Course Title:	ARTIFIC	IAL NEURAL NETWORKS						
2	Course Code:	EEM4420							
3	Type of Course:	Optional							
4	Level of Course:	First Cycle							
5	Year of Study:	4							
6	Semester:	8							
7	ECTS Credits Allocated:	4.00							
8	Theoretical (hour/week):	3.00							
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:	Doç. Dr. NEYİR ÖZCAN SEMERCİ							
15	Course Lecturers:	-							
16	Contact information of the Course Coordinator:	E-posta:neyir@uludag.edu.tr Tel: (224) 294 06 50 Adres: Elektronik Mühendisliği Bölümü 5. Kat, No:540							
17	Website:								
18	Objective of the Course:	The aim of this course is teaching sufficient theorical and practical knowledge about artificial neural networks.							
19	Contribution of the Course to Professional Development:	Gain the sufficient theorical and practical knowledge about artificial neural networks.							
20	Learning Outcomes:								
	•	1 To be able to model and solve problems with arti neural networks using toerical and practical know							
		2	Gain the ability to identify, model, and solve complex engineering problems to select and apply appropriate analysis and modelling methods for artificial neural network problems.						
		3	Acquiring the ability to design partly or fully with artificial neural networks for a complex system, process meeting specific requirements under realistic constraints and conditions.						
		4	To be able to develop, select, and use modern techniques and tools efficiently using information technologies for artificial neural network applications.						
		5	Gain the ability to design and conduct complex experiments and to collect, analyze and interpret data for artificial neural network engineering problems.						
		6							
		7							
		8							
		9							
		10							
21	Course Content:								
	Course Content:								

Week	Theoretical		Practice							
1	Artifical Inteligence and Artificial Neu Networks	ral								
2	Realizing Artificial Neural Networks.									
3	Realizing Artificial Neural Networks: McCulloch-Pitts Model,									
4	Activation functions									
5	Models Artificial Neural Networks: Feedforward Neural networks, feedb neural networks	ack								
6	Learning for Artificial Neural Network Supervised, Unsupervised, Reinforce Learning	: ement								
7	Neural Network Learning Rules: Heb Learning Rule, Perceptron Learning Delta Learning Rule	bian Rule,								
8	Neural Network Learning Rules: Wid Learning Rule, Correlation Learning Winner-Take-All Learning Rule, Outs Learning Rule	row-Hoff Rule, tar								
9	Multilayer Feedforward Networks, XC problem	DR								
10	Backpropogation Algorithm									
11	Evaluation of network performance ir neural networks	n artificial								
Activit	ies		Number	Duration (hour)) Total Work Load (hour)					
Theore	CNNs, Kohen-Grossberg, Cognitron	networks	14	3.00	42.00					
Theore Practica	CRNs, Kohen-Grossberg, Cognitron als/Labs	networks	14 0	3.00 0.00	42.00 0.00					
Theore Practica Self-stu	CNNs, Kohen-Grossberg, Cognitron als/Labs Lextbooks, References and/or Other Water also	networks	14 0 11 JVJ. Jacek Zurada Systems, West Put	3.00 0.00 a, , Introquetion to Artific	42.00 0.00 1928.00					
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Measurement and Evaluation Techniques Used in the	Measurement and evaluation is carried out according to
Course	the priciples of Bursa Uludag University Associate and
	Undergraduate Education Regulation.

24 ECTS / WORK LOAD TABLE

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16
ÖK1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	rib 1 very low n il:			2 low		3 Medium		4 High			5 Very High					