

FUZZY LOGIC

1	Course Title:	FUZZY LOGIC
2	Course Code:	EEM6102
3	Type of Course:	Optional
4	Level of Course:	Third Cycle
5	Year of Study:	1
6	Semester:	2
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:	Prof. Dr. FAHRİ VATANSEVER
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Adres: Elektrik-Elektronik Mühendisliği bölümü, No:311 Tel: (224) 294 09 05 Web: http://home.uludag.edu.tr/~fahriv E-posta: fahriv@uludag.edu.tr
17	Website:	
18	Objective of the Course:	To gain ability modeling-analyzing-designing fuzzy systems with understanding fuzzy set and its theory and designing fuzzy controller for applications
19	Contribution of the Course to Professional Development:	Effective use of fuzzy logic in the professional area
20	Learning Outcomes:	
	1	To gain ability to analyze fuzzy systems
	2	To gain ability to design fuzzy systems
	3	To gain ability to implement fuzzy systems
	4	To gain ability to analyze-synthesis fuzzy systems with software
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Basics of fuzzy logic and application areas	
2	Classic and fuzzy logic sets	
3	Operations in fuzzy sets	
4	Classical and fuzzy logic theories	
5	Classical and fuzzy relations	

6	Membership functions, fuzzification, defuzzification	
7	Logic and fuzzy systems	
8	General review	
9	Fuzzy system modeling and analysis	
10	Fuzzy control systems analysis and design	
11	Fuzzy control systems analysis and design	
12	Fuzzy PID controller design	
13	Adaptive fuzzy control systems analysis and design	
14	Fuzzy control applications	

22	Textbooks, References and/or Other Materials:	1. Ross, T.J., Fuzzy Logic with Engineering Applications, John Wiley & Sons, 2004. 2. Wang, L.X., A Course in Fuzzy Systems and Control, Prentice Hall, 1997. 3. Kasabov, N.K., Foundations of Neural Networks, Fuzzy Systems, and Knowledge Engineering, MIT Press, 1998.
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23	Assesment	
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TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00

Activites	Number	Duration (hour)	Total Work Load (hour)
Total	1	30.00	30.00
Theoretical	14	3.00	42.00
Contribution of Term (Year) Learning Activities to	40.00		
Practicals/Labs	0	0.00	0.00
Self study and preparation	14	6.00	84.00
Contribution of Final Exam to Success Grade	60.00		
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Measurement and Evaluation Techniques Used in the Midterm and final exams			
Field Studies	0	0.00	0.00

24	ECTS / WORK LOAD TABLE	1	24.00	24.00
	Others	0	0.00	0.00
	Final Exams	1	30.00	30.00
	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	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	5	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

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