

Course Name	Course Code	semester	T + P	Credit	ECTS
Computer Aided Drawing			3+0	3	6

Prerequisite Courses	None
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Language of Course	Turkish
Course class	Technical Elective
Coordinator of Course	Yrd.Doç.Dr. İbrahim Berkan AYDİLEK
Instructor	Yrd.Doç.Dr. İbrahim Berkan AYDİLEK
Course Assistant	
Objective of Course	This course is aimed at general purpose students; Blur concept, fuzzy clusters, fuzzy membership functions, properties of fuzzy clusters, basic fuzzy operations, fuzzy relations and associations. Fuzzy model of uncertainty: Fuzzy clustering and sharing. Designing and simulating on physical models such as fuzzy rule-based systems and fuzzy decision making.
Course Learning Output	Students who have successfully completed this course: • Blur concept, fuzzy sets, fuzzy membership functions, fuzzy clusters can explain properties.
Course Contents	Fuzzy concept, fuzzy clusters, fuzzy membership functions, properties of fuzzy clusters, basic fuzzy operations, fuzzy relations and associations. Fuzzy model of uncertainty: Fuzzy clustering and sharing. Fuzzy rule-based systems and fuzzy decision making. A brief overview of modeling and control of physical systems. Design and simulation of fuzzy logic controllers. Examples of different fuzzy logic applications

Weeks	Topics
1	Fuzzy concept
2	Fuzzy sets, fuzzy membership functions
3	Properties of fuzzy clusters
4	Basic fuzzy operations: merging, intersection, interpolation, negation, etc.
5	Fuzzy relations and association
6	Fuzzy model of uncertainty: Fuzzy clustering and sharing
7	Fuzzy rule-based systems and fuzzy decision making: Mamdani, Sugeno and TSK models
8	MIDTERM
9	A brief overview of modeling and control of physical systems
10	Design and simulation of fuzzy logic controllers
11	Examples of different fuzzy logic applications
12	Fuzzy logic system analysis
13	Matlab / Simulink examples 1
14	Matlab / Simulink examples 2

15	FINAL EXAM
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General Sufficiency
Students should have knowledge of fuzzy logic operations and evaluate their ability to use Matlab / Simulink software.
References
<ul style="list-style-type: none"> • Neuro-Fuzzy and Soft Computing: A Computational Approach to Learning and Machine Intelligence," by J.S.R. Jang, C.T. Sun, and E. Mizutani, Prentice Hall, 1996 • Foundations on Neuro-Fuzzy Systems, D. Nauck, F. Klawonn, R. Kruse, Wiley, Chichester, 1997 • Fuzzy Logic with Engineering Applications by T.J. Ross, McGraw-Hill Book Company, 1995. • Fuzzy Control, K.M. Passino, S.Yurkovich, Addison-Wesley-Longman, 1998. • Neural Fuzzy Systems: A Neuro-Fuzzy Synergism., by Lin, (1996) , Prentice Hall. • Fuzzy Sets, Uncertainty, and Information by G.J. Klir and T.A. Folger, Prentice Hall, Inc.
Assessment
Midterm exam: 40%, Final exam: 60%; Project or homework evaluations may be made at the beginning of the semester.