Lecture Plan

B.Tech (EI)   Semester 8th

Code EIC-410

Subject Name- Fuzzy Control System

No. of Credits   4

Unit	Topic	Duration (hours)	References
1	Fuzzy control from an industrial perspective, Advantages & disadvantages	2	"Fuzzy Control System" by D. Driankov, Narosa Publications
	Knowledge based controllers, Knowledge representation in KBCs	2	Fuzzy Control System" by D. Driankov, Narosa Publications
2	Fuzzy Sets, their properties & Operations, Fuzzy Relations, their properties& Operations, Numerical problems manually as well as using Matlab	3	"Fuzzy Logic & Fuzzy sets" by M.Ganesh, "Fuzzy logic & its Engg. Applications" by T.J.Ross
	Extension Principle, Fuzzy Propositions, Compositional Rule , Inference mechanism	3	"Fuzzy Logic & Fuzzy sets" by M.Ganesh, "Fuzzy logic & its Engg. Applications" by T.J.Ross
	Different Implications & Representation of rules, Numerical problems manually as well as using Matlab	2	"Fuzzy Logic & Fuzzy sets" by M.Ganesh, "Fuzzy logic & its Engg. Applications" by T.J.Ross
3	FKBC Architecture, choice of rules, content of rules, Membership functions, Scaling factor	2	"Fuzzy Control System" by D. Driankov, Narosa Publications
	Methods of fuzzification & de-fuzzification, Comparison & evaluation of de-fuzzification methods , Numerical problems manually as well as using Matlab	4	"Fuzzy Logic & Fuzzy sets" by M.Ganesh, "Fuzzy logic & its Engg. Applications" by T.J.Ross
4	FKBC as a non-linear transfer element, PID like FKBC	4	"Fuzzy Control System" by D. Driankov, Narosa Publications
	Sliding Mode FKBC, SUGENO FKBC, design problems using Matlab	4	"Fuzzy Control System" by D. Driankov, Narosa Publications
5	Design & Performance evaluation,membership function tuning using gradient descent & performance criterion	4	"Fuzzy Control System" by D. Driankov, Narosa Publications
	Model based controller, Design problems using Matlab	3	"Fuzzy Control System" by D. Driankov, Narosa Publications
6	State approach, Stability & robustness indices	4	"Fuzzy Control System" by D. Driankov, Narosa Publications
	Input output stability, Circle criterion, Conicity Criterion	4	"Fuzzy Control System" by D. Driankov, Narosa Publications
	TOTAL	41	