



Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India
(Autonomous Institute Affiliated to University of Mumbai)

Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned				
		L	T	P	L	T	P	Total	
ITL8045	Soft Computing Lab	--	--	2	--	--	1	1	
		Examination Scheme							Total
		ISE		ESE			Total		
				Practical	Oral				
		40	-		20		60		

Pre-requisite Course Codes	ITC8045 (Soft Computing)	
After successful completion of the course, student will be able to:		
Course Outcomes	CO1	Design fuzzy logic control systems
	CO2	Apply supervised learning algorithms on various input patterns
	CO3	Apply unsupervised learning algorithms on various input patterns
	CO4	Design simple genetic algorithms for solving optimization problems
	CO5	Make use of available open source toolboxes for a particular soft computing technique

Exp. No.	Experiment Details	Ref.	Marks
1	To create a fuzzy library	2,3,4	5
2	To implement fuzzy membership functions.	2,3,4	5
3	To Design and implement Fuzzy Controller.	2,3,4	5
4	To implement Supervised Learning algorithm. (Single Discrete Perceptron Training Algorithm)	1,3	5
5	To implement Unsupervised Learning algorithm. (Winner take all Learning)	1,3	5
6	To implement Error Back-Propagation Training Algorithm	1,3	5
7	To solve an optimization problem using genetic algorithm	3,4	5
8	To use fuzzy toolbox/ ANN toolbox in Scilab for solving a given problem	1,2,3	5
Total Marks			40

References:

1. Jacek M. Zurada, "Introduction to Artificial Neural Systems," Jaico Publishing House.
2. Timothy J. Ross, "Fuzzy Logic with Engineering Applications," 3rd ed. Wiley India.
3. S. N. Sivanandam and S. N. Deepa, "Principles of Soft Computing," 2nd ed. Wiley India.
4. Jang J.S.R, Sun C. T. and Mizutani E., "Neuro-Fuzzy and Soft Computing – A Computational Approach to Learning and Machine Intelligence," PHI.