

Lesson Plan

Faculty : Archana Lopes

CLASS		BE Electronics, Semester VII						
Academic Term		July-Dec 2019						
Subject		Neural Network and Fuzzy System						
Periods (Hours) per week	Lecture		4					
	Practical		2					
	Tutorial		--					
Evaluation System			Hours		Marks			
	Theory examination		3		80			
	Internal Assessment		--		20			
	Practical Examination		--		--			
	Oral Examination		--		25			
	Term work		--		25			
	Total		--		150			
Time Table								
		Day			Time			
		Tuesday			8.45 a.m.			
		Wednesday			1.30 p.m.			
		Thursday			2.30 p.m.			
		Friday			9.45 a.m.			
Course Content and Lesson plan								
Module I:Introduction								
Week	Lecture No.	Date		Topic	Remarks(If any)	Text Book	CO	PO
		Planned	Actual					
1	1	02-07-2019		Introduction		TB1	EXC7052.1	PO1
	2	03-07-2019		Biological neuron,McCulloch and Pitts models of neuron, Important Terms of ANNs		TB2 TB4 TB6		PO3 PO5

	3	04-07-2019		Learning Rule: Supervised learning, Unsupervised learning and Reinforcement learning				
2	4	09-07-2019		Network architectures, Knowledge representation, Hebb net				
	5	10-07-2019		Problems solving based on Mc-Culloch and Pitts model and Hebb network.				
	6	11-07-2019		Perceptron Learning Rule and Problems based on Perceptron networks				
3	7	16-07-2019		Delta Learning Rule, Widrow-Hoff Learning Rule, Correlation Learning Rule				
	8	17-07-2019		Winner Take-All Learning Rule				
	9	18-07-2019		Applications and scope of Neural Networks	Assignment 1			
Module 2: Supervised Learning Networks								
3	10	19-07-2019		Perception Networks – continuous & discrete, Perceptron convergence		TB1 TB2 TB4 TB6	EXC7052.1	PO1 PO3 PO5

				theorem				
4	11	23-07-2019		Adaline, Madaline				
	12	24-07-2019		Problems based on Adaline, Madaline				
	13	25-07-2019		Method of steepest descent, – least mean square algorithm				
	14	26-07-2019		Linear & non-linear separable classes & Pattern classes				
5	15	30-07-2019		Back Propagation Network				
	16	31-07-2019		Problems based on Back Propagation Network	Submission of Assignment 1			
	17	01-08-2019		RBF networks			EXC7052.1	PO1 PO3 PO5
	18	02-08-2019		Problems based on RBF networks				
6	19	06-08-2019		Revision Problems	Assignment 2			
	20	07-08-2019		Introduction to Unsupervised learning network.			EXC7052.1	PO1 PO3 PO5
Module 3: Unsupervised Learning Networks								
6	21	08-08-2019		Fixed weights competitive nets		TB1 TB2 TB4 TB6	EXC7052.1	PO1 PO3 PO5
	22	09-08-2019		Fixed weights competitive nets				
7	23	20-08-2019		Kohonen Self-organizing Feature Maps				
	24	21-08-2019		Kohonen Self				

				Organizing Feature Maps				
	25	22-08-2019		Learning Vector quantization				
	26	23-08-2019		ART networks				
8	27	27-08-2019		ART networks				
	28	28-08-2019		Problem solving				
Module 4: Associative Networks								
8	29	29-08-2019		Training algorithms for Pattern Association	Submission of Assignment 2			
	30	30-08-2019		Auto Associative Memory Network		TB1 TB2 TB4 TB6	EXC7052.3	PO2
9	31	11-09-2019		Bi-directional Associative Memory				
	32	12-09-2019		Hopfield Networks				
	33	13-09-2019		Hopfield Networks				
10	34	17-09-2019		Boltzmann Machine				
	35	18-09-2019		Brain in a box				
	36	19-09-2019		Revision Problems				
Module 5: Fuzzy Logic								
10	37	20-09-2019		Fuzzy sets and fuzzy set operations, Fuzzy relations	Assignment 3			
	38	24-09-2019		Operations on Fuzzy Relations, The extension principle	Submission of Assignment 3	TB3 TB5	EXC7052.2	PO1 PO3 PO5
12	39	25-09-2019		Fuzzy mean membership functions				
	40	26-09-2019 01-10-2019 03-10-2019 04-10-2019		Fuzzy controllers and ANFIS				

Text- Books:

1. Dr. S. N. Sivanandam, Mrs S.N. Deepa, “Principles of Soft computing”, Wiley Publication.
2. Jacek M. Zurada, "Introduction to Artificial Neural Systems, Jaico publishing house.

Reference books :

1. Simon Haykin, “Neural Network a - Comprehensive Foundation”, Pearson Education.
2. S. Rajsekaran, Vijaylakshmi Pai, “Neural Networks, Fuzzy Logic, and Genetic Algorithms”, PHI.
3. Thimothy J. Ross, “Fuzzy Logic with Engineering Applications”, Wiley Publication.
4. Christopher M Bishop, “Neural Networks For Pattern Recognition” ,Oxford Publication

Examination Scheme

Module		Lecture Hours	Marks distribution in Test (For internal assessment/TW)		Approximate Marks distribution in Sem. End Examination
			Test 1	Test 2	
1.	Fundamental Concepts of Neural Networks	8	08		20
2.	Supervised Learning Networks	12	08		30
3	Unsupervised Learning Networks	12	04		20
4	Associative Networks	10		08	20
5	Fuzzy Logic	10		12	30

Submitted By	Approved By
Prof. Archana Lopes	ii) Prof. K. Narayanan Sign:
Sign:	ii) Prof. Sapna Prabhu Sign:
	iii) Prof. Shilpa Patil Sign:
	iv) Prof. Monica Khanore Sign:
Date of Submission:	Date of Approval:
Remarks by PAC (if any)	