

Lesson Plan-NNFL

Name of the Faculty: Ms. Mahima Goel (Theory and Practical)

Discipline: Computer Science Engineering

Semester: 8th

Subject: Neural Networks & Fuzzy Logic (CSE – 402)

Lesson Plan Duration: 15 weeks (from January 2018 to April 2018)

Work Load (Lecture/Practical) Per Week (in hours): Lecture - 04, Practical – 03

Week	Theory		Practical	
	Lecture Day	Topic including Assignment/Test)	Practical Day	Topic
1	1	Concept of Neural Networks	1	Introduction to MATLAB and basic programs of MATLAB
	2	Characteristics of Neural Networks		
	3	Historical perspective and application of Neural Networks		
	4	The Biological prototype		
2	1	Neuron concept, Single layer Neural Networks	2	Write a MATLAB program to generate AND function for binary data type using Mc-Culloch-Pitts neuron.
	2	Multi Layer Neural Networks		
	3	Assignment and its solution		Write a MATLAB program to generate OR function for binary data using mc-culloch-pitts neuron.
	4	Terminology, Notation and representation of Neural Networks		
3	1	Training of Artificial Neural Networks	3	Write a MATLAB program to generate NOT function for binary data using mc-culloch-pitts neuron.
	2	Representation of Perceptron and issues		
	3	Perceptron learning and training		Write a MATLAB program to generate NAND function for binary data using mc-culloch-pitts neuron.
	4	Perceptron learning and training and Assignment (unsolved)		

4	1	Doubts and Test	4	Write a MATLAB program to generate NOR function for binary data using mc-culloch-pitts neuron.
	2	Classification, liner separability		
	3	Hopfield nets:Introduction		
	4	Hopfield nets:Structure		
5	1	Training and applications	5	Write a MATLAB program to generate AND NOT function for binary data using mc-culloch-pitts neuron.
	2	Stability		
	3	Back propagation : Concept and Applications		
	4	Back Propagation Training Algorithms		
6	1	Back Propagation Training Algorithms	6	Write a program to generate AND function using Perceptron neural network.
	2	Counter Propagation Networks (Introduction)		
	3	Counter Propagation Networks		
	4	Kohonan Network and Assignment (unsolved)		
7	1	Test	7	Write a program to generate OR function using perceptron neural network.
	2	Grossberg Layer & Training		
	3	Grossberg Layer & Training (cont.)		
	4	Application of counter propagation		
8	1	Application of counter propagation (Cont.)	8	Write a program to generate NAND function using perceptron neural network.
	2	Assignment and its solution		
	3	Image classification (Introduction)		
	4	Image classification (Methods)		
9	1	Bi-directional Associative Memories (Introduction)	9	Write a program to generate NOR function using perceptron neural network.

	2	Bi-directional Associative Memories: Structure		
	3	Retrieving a stored association		
	4	Encoding associations		
10	1	Memory capacity and Assignment (Unsolved)	10	Write a program to generate AND NOT function using perceptron neural network.
	2	Test		
	3	ART architecture		
	4	ART architecture (Cont.)		
11	1	ART classification operation	11	Write a program to generate NOT function using perceptron neural network.
	2	ART implementation		
	3	Characteristics of ART		
	4	Assignment and its solution		
12	1	Optical Neural Networks: Vector Matrix Multipliers	12	Write a program to generate XOR function using perceptron neural network.
	2	Optical Neural Networks: Vector Matrix Multipliers (Cont.)		
	3	Optical Neural Networks: Introduction		
	4	Hop field net using Electro optical matrix multipliers		
13	1	Holographic correlator	13	Design a perceptron neural network to classify number as even odd.
	2	Optical Hopfield net using Volume Holograms		
	3	The Cognitrons and Neocognitrons: Introduction and Structure		
	4	The Cognitrons and Neocognitrons: Their structure and training		
14	1	Assignment and its solution	14	Write a program to store the vector (1 1 1 0 1 1 1 0). Find the weight matrix with no self connection .Test this using hopfield net with mistake in 1st ,2nd ,4th,5th ,7th,9th component
	2	Genetic Algorithms : Elements		
	3	A simple genetic		

		algorithm		of stored vector (1 1 1 0 1 1 1 0).
	4	Working of genetic algorithms		
15	1	Working of genetic algorithms evolving neural networks	15	Internal Viva
	2	Assignment (unsolved)		
	3	Test		
	4	Mock Exam (Complete Syllabus)		