

PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
LESSON PLAN

Subject Name: - Neural Networks and Deep Learning

Branch/Semester: - 8TH SEM

Subject Code:- PE-CS-D411A

Sr. No.	Lecture No.	Description of Topic
1	L1	Unit-I Artificial Neural Networks:
2	L2	Human brain, Model of an artificial neuron, Basic concepts of neural networks, fundamentals of biological neural network and artificial neural network
3	L3	fundamentals of biological neural network and artificial neural network
4	L4	evolution of neural networks, Characteristics of Neural Networks
5	L5	learning methods-supervised, unsupervised and reinforcement
6	L6	learning methods-supervised, unsupervised and reinforcement
7	L7	learning methods-supervised, unsupervised and reinforcement
8	L8	taxonomy of neural network architectures
9	L9	taxonomy of neural network architectures
10	L10	terminologies-weights, bias
11	L11	threshold, learning rate, applications of Neural Networks.
12	L12	Unit-II Supervised and Unsupervised Neural Networks:
13	L13	Hebb network theory and training algorithm
14	L14	perceptron networks architecture and training algorithms
15	L15	Back Propagation networks architecture and Training Algorithms
16	L16	Back Propagation networks architecture and Training Algorithms

17	L17	Associative Memory network architecture and Training Algorithms
18	L18	Hopfield networks architecture and Training Algorithms
19	L19	Counter Propagation networks architecture and Training Algorithms
20	L20	adaptive resonance theory networks architecture and Training Algorithms
21	L21	Unit-III
		Advanced neural networks:
22	L22	Kohonan self organising feature, maps architecture and training algorithm
23	L23	learning vector quantization architecture and training algorithm
24	L24	boltzman machine
25	L25	cognitron network, neocognitron network
26	L26	optical neural networks
27	L27	electro-optical multipliers and holographic correlators
28	L28	Unit-IV
		Deep learning:
29	L29	Machine learning basics, simple machine learning algorithms
30	L30	linear regression
31	L31	underfitting and overfitting challenges in machine learning
32	L32	supervised learning approach for support vector machine
33	L33	Deep Forward Networks, Convolutional networks
34	L34	deep recurrent networks
35	L35	deep boltzmann machine
36	L36	applications in speech recognition and natural language processing
37	L37	applications in speech recognition and natural language processing
38	L38	Revision