SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Electronics & Communication)
Semester: IV
Syllabus with Effect from: June - 2012

Paper Code: PS04EELC02	**Total Credit: 4**
Title Of Paper: Artificial Neural Network	

Unit	Description in detail	Weightage (%)
I	Introduction to Biological neurons and memory, structure and function of single neuron, artificial neural networks,	20%
II	Classification, clustering, vector quantization, pattern recognition, function approximation, forecasting, control, optimization, basic approach of working of ANN- training, learning, generalization.	20%
III	Supervised learning, single layer networks, perception linear separability, training algorithm, limitations, multi layer networks architecture, back propagation algorithm and other training algorithm, applications. Adaptive multilayer network architecture, training algorithms, recurrent networks, feed forward networks, radial basic function network.	20%
IV	Unsupervised learning, winner-takes-all networks, hamming network, maxnet, simple competitive learning, vector- quantization, counter propagation networks, adaptive resonance theory, Kohonen's self-organizing maps, principal component analysis.	20%

Basic Text & Reference Books:-

- Introduction to Artificial Neural Systems: J.M.Zurada, Jaico Publishers.
- Elements of Artificial Neural Networks: Kishan Mehrotra, Chelkuri K. Mohan, and Sanjay Ranka, Penram International.
- Artificial Neural Network: Simon Haykin, Pearson Education.
- Neural Networks- A comprehensive foundation: Simon Haykin, Macmillan publication.
- Neural Networks of Optimization and Signal Processing: A Cichocki and R Unbehauen.