S. No.	Contents	Contact Hours
1.	Evolution of neural networks; Artificial Neural Network: Basic model, Classification, Feed forward and Recurrent topologies, Activation functions; Learning algorithms: Supervised, Un-supervised and Reinforcement; Fundamentals of connectionist modeling: McCulloach – Pits model, Perceptron, Adaline, Madaline	**08**
2.	Topology of Multi-layer perceptron, Back propagation learning algorithm, limitations of Multi-layer perceptron. Radial Basis Function networks: Topology, learning algorithm; Kohenen's self-organising network: Topology, learning algorithm; Bidirectional associative memory Topology, learning algorithm, Applications	**08**
3.	Recurrent neural networks: Basic concepts, Dynamics, Architecture and training algorithms, Applications; Hopfield network: Topology, learning algorithm, Applications; Industrial and commercial applications of Neural networks: Semiconductor manufacturing processes, Communication, Process monitoring and optimal control, Robotics, Decision fusion and pattern recognition	**07**
4.	Classical and fuzzy sets: Introduction, Operations and Properties, Fuzzy Relations: Cardinality, Operations and Properties, Equivalence and tolerance relation, Value assignment: cosine amplitude and max-min method; Fuzzification: Membership value assignment- Inference, rank ordering, angular fuzzy sets, Defuzzification methods, Fuzzy measures, Fuzzy integrals, Fuzziness and fuzzy resolution; possibility theory and Fuzzy arithmetic; composition and inference; Considerations of fuzzy decision-making	**12**
5.	Basic structure and operation of Fuzzy logic control systems; Design methodology and stability analysis of fuzzy control systems; Applications of Fuzzy controllers. Applications of fuzzy theory	**07**
	Total	**42**

11.Suggested Books

S. No.	Name of Books/ Authors	Year of publication/ Reprint
1.	Neural Networks in Computer Intelligence by Limin Fu,/McGraw Hill	2003
2.	Soft Computing and Intelligent Systems Design, Theory, Tools and Applications by Fakhreddine O. Karray and Clarence De Silva./ Pearson Education, India	2009
3.	Fuzzy Logic with Engineering Applications by Timothy J. Ross/ McGraw Hill	1995
4.	Artificial Neural Networks by .B.Yegnanarayana, PHI, India	2006

1.Subject code: **EP- 422** Course title: Embedded Systems
2. Contact Hours: L: 3 T: 0 P: 2
3. Examination Duration (Hrs): Theory: 3 Practical: 0
4. Relative Weight: CWS: 15, PRS:-25-, MTE: 20, ETE: 40, PRE: 0
5. Credits: 4
6. Semester: VII
7. Subject area: DEC