**SRI RAMAKRISHNA MISSION VIDYALAYA**

**COLLEGE OF ARTS & SCIENCE- COIMBATORE - 641 020**

For candidates admitted from academic year 2013 – 2014onwards under New CBCS

**ARTIFICIAL INTELLIGENCE AND SOFT COMPUTING**

**Year : III Semester : V**

**Hours / Week : 5 Subject Code : 5CT11**

 **Credits : 4**

**UNIT I**

Introduction — definition of AI, Task domains, underlying Assumption, Criteria for success, State space (Water Jug Problem), Production systems, problem characteristics, Production system characteristics.

**UNIT II**

Heuristic search techniques — Generate and Test, Hill — Climbing, Best — First search, Problem Production, Constraint satisfaction, Means — end analysis.

**UNIT III**

Knowledge representation-Non Formal Methods: Production rules, Semantic Nets, Frames & Scripts-Formal Methods: Unification and Resolution

**UNIT IV**

Neural Network-Supervised Network- Back propagation Network-Unsupervised Network: ART(Adaptive Resonance Theory)-Simple Genetic Algorithm - Operators: Cross over and mutation.

UNIT V

**FUZZY LOGIC -** Introduction-Membership functions-Type1 and Type 2 systems.

**Applications:** Expert systems, Vision, Natural Language Processing, Learning

**TEXT BOOKS:**

1. Elaine Rich and Kevin knight, Artificial Intelligence, Tata McGraw Hill,29th Reprint, 2002.

2. Freeman Skapura, Neural Networks Fundamentals, Pearson Education, 2011

3. Introduction to Genetic Algorithms, Goldberg, Pearson Education, 1989.

4. H.J. Zimmermann, Fuzzy set theory and its applications , 4th Edition, 2nd Reprint , Springer 2010.

**REFERENCE BOOK:**

1. Dan.W.Patterson, Introduction to Artificial Intelligence and Expert systems, pHI,1990
2. P.H.Winston, Artificial Intelligence, Second Edition Addison Wesley,1984
3. E.Charniak, D.McDermott, Introduction to Artificial Intelligence, Addison Wesley,1985