SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc – Information Technology (Integrated)
Semester: VIII
Syllabus with Effect from: June-2015

Paper Code: PS08CIIT03	Total Credit: 4
Title Of Paper: Artificial Intelligence	

Unit	Description in Detail	Weightage (%)
I	**Artificial Intelligence and Knowledge-Based Systems** Natural and Artificial Intelligence – Characteristics and Definitions of AI AI based systems, Testing the Intelligence with Turing Test, and Chinese Room Experiment, Application Areas of Artificial Intelligence, Data Pyramid and Computer Based Systems Production Systems and AI based Searches like Hill Climbing and Heuristic Search Introduction & Objectives of KBS, Components of KBS Categories of the KBS like Expert Systems, Database Management Systems in Conjunction with an Intelligent User Interface, Linked Systems, CASE Based Systems, Intelligent Tutoring Systems, etc. Issues and limitations of KBS General structure of KBS, Conflict Resolution Strategies for Rule Based Systems Knowledge Base Shell Advantages, limitations and applications of Knowledge-Based Systems	25%
II	**Development of Knowledge-Based Systems** Development of Knowledge-Based System, Difficulties in KBS Development Knowledge-Based Systems Development Model, Knowledge Acquisition Process and Techniques, Knowledge Sharing, Dealing with Multiple Experts, Issues in Knowledge Acquisition, Knowledge Update Characteristics of Good Knowledge Representation Scheme Factual and Procedural Knowledge Representation Applications and Users of KBS Tools for KBS development and Case Studies	25%
III	**Fuzzy Logic and Neural Network** Introduction to fuzzy logic Fuzzy logic and fuzzy sets, Membership Functions, Fuzzification and Defuzzification, Operations on Fuzzy Sets Fuzzy Functions and Linguistic Variables Fuzzy Relationships, Propositions and Connectives Fuzzy Inference Fuzzy Rules, Fuzzy Control System and Fuzzy Rule Based Systems Neural Networks: Introduction, Advantages and Disadvantages of Neural Networks Biological Neuron and Artificial Neuron Neural Network Architectures Applications of Neural Network	25%
IV	**Genetic Algorithms** Introduction to Genetic Algorithms	25%

	Basic Terminology, Genetic Algorithms, GA Cycle Basic Operators of Genetic Algorithms Function Optimization, Edge Recombination Schema	

Basic Text & Reference Books:-

- Elain Rich: "Artificial Intelligence", McGraw Hill, Third Edition, 2001.
- R. Akerkar: "Introduction to Artificial Intelligence", Prentice Hall of India, 2005.
- R. Akerker and P. S. Sajja: "Knowledge-Based Systems", Jones and Bartlettes, MIT, 2010.