V. S. M. COLLEGE(A) : : RAMACHANDRAPURAM

MCA 3.2 ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

III SEMESTER

Instruction: 4 Periods/week **Time: 3 Hours** **Credits: 4**

UNIT I

What is AI, The Foundations of AI, The History of AI, Agents and Environments, The Concept of Rationality, The Nature of Environments, The Structure of Agents, Problem Solving Agents, Example Problems, Searching for Solutions, Uninformed Search Strategies: Breadth First, Depth First, Depth Limited; Informed Search Strategies: Greedy Best First, A* Algorithms

UNIT II

Heuristic Functions, Local-Search Algorithms and Optimization Problems: Hill Climbing, Simulated Annealing, Genetic Algorithms; Constraint Satisfaction Problems, Backtracking Search For CSPs, Games, Optimal Decisions in Games

Knowledge Based Agents, The Wumpus World, Logic, Propositional Logic, Reasoning Patterns in Propositional Logic, Syntax and Semantics of First Order Logic, Using First Order Logic, Inference in First-Order Logic: Unification, Resolution.

UNIT III

Acting Under Uncertainty, Basic Probability Notation, The Axioms of Probability, Inference Using Full Joint Distribution, Independence, Bayes Rule and Its Use, Other Approaches To Uncertain Reasoning: Dempster Shafer Theory, Fuzzy Sets and Fuzzy Logic

Combining Beliefs Under Uncertainty, The Basis of Utility Theory, Utility Functions, Multi Attribute Utility Functions, Decision Theoretic Expert Systems

UNIT IV

Expert System, Concepts and Characteristics, Applications and Domains of Expert System, Elements Of an Expert System, Stages in the Development of an Expert System, Semantic Nets, Frames

Speech Recognition, Forms of Learning, Inductive Learning, Learning Decision Trees, Single Layer Feed Forward, Multi Layer Feed Forward Neural Networks.

Text Books:

1. Artificial Intelligence: A Modern Approach. Stuart Russell, Peter Norvig, Pearson Education 2nd Edition.
2. Expert Systems : Principles and Programming. Joseph C Giarratano, Gary D Riley Thomson Publication, 4th Edition.

Reference Books:

1. Elaine Rich and Kevin Knight: Artificial Intelligence , Tata McGraw Hill.
2. Dan W.Patterson, Introduction to Artificial Intelligence and Expert Systems, Prentice Hall of India.

V. S. M. COLLEGE(A) : : RAMACHANDRAPURAM

MCA 5.4.1 CLOUD COMPUTING

V SEMESTER

Instruction: 4 Periods/week **Time: 3 Hours** **Credits: 4**

UNIT I

Cloud Computing Basics - Cloud Computing Overview, Applications, Intranets and the Cloud, First Movers in the Cloud. The Business Case for Going to the Cloud - Cloud Computing Services, Business Applications, Deleting Your Datacenter, Salesforce.com, Thomson Reuters.

Organization and Cloud Computing - When You Can Use Cloud Computing, Benefits, Limitations, Security Concerns, Regulatory Issues, Cloud Computing with the Titans - Google, EMC, NetApp, Microsoft, Amazon, Salesforce.com, IBMPartnerships.

UNIT II

Hardware and Infrastructure - Clients, Security, Network, Services. Accessing the Cloud - Platforms, Web Applications, Web APIs,Web Browsers. Cloud Storage - Overview, Cloud Storage Providers, Standards - Application, Client, Infrastructure, Service.

Software as a Service - Overview, Driving Forces, Company Offerings, Industries Software plus Services - Overview, Mobile Device Integration, Providers, Microsoft Online.

UNIT III

Developing Applications - Google, Microsoft, Intuit QuickBase, Cast Iron Cloud, BungeeConnect, Development, Troubleshooting, Application Management.

Local Clouds and Thin Clients - Virtualization in Your Organization, Server Solutions, ThinClients, Case Study: McNeilus Steel.

UNIT IV

Migrating to the Cloud - Cloud Services for Individuals, Cloud Services Aimed at the Mid- Market, Enterprise-Class Cloud Offerings, Migration, Best Practices and the Future of Cloud Computing - Analyze Your Service, Best Practices, How Cloud Computing Might Evolve.

Text Books:

1. Cloud Computing-A Practical Approach, Anthony T. Velte, Toby J. Velte, RobertElsenpeter. McGrawHill.

Reference Books:

1. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier.
2. Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madisetti, UniversityPress

ANDHRA UNIVERSITY

Master of Computer Applications(MCA)

PAPER: MCA 5.2 CYBER SECURITY

Instruction:4 Periods/week **Time: 3 Hours** **Credits:4**
Internal:25 Marks **External: 75 Marks** **Total: 100 Marks**

UNIT I

Information Security and Threats: Information Security, Information Assets, Threats to Information Assets. **Fundamentals of Information Security:** Elements of information security, Principles and concepts – data security, Types of controls.

Data Leakage: Introduction – Data Leakage, Organizational Data Classification, Location and Pathways, Content Awareness, Content Analysis Techniques, Data Protection, DLP Limitations, DRM-DLP Conundrum.

UNIT II

Cyber Security Introduction: Cyber Security, Cyber Security policy, Domains of Cyber Security Policy: Laws and Regulations, Enterprise Policy, Technology Operations, Technology Configuration, Strategy Versus Policy.

Cyber Security Evolution: Productivity, Internet, e-commerce, Counter Measures, Challenges.

UNIT III

Cyber Security Objectives: Cyber Security Metrics, Security Management Goals, Counting Vulnerabilities, Security Frameworks, Security Policy Objectives.

Guidance for Decision Makers: Tone at the Top, Policy as a Project, Cyber Security Management: Arriving at Goals, Cyber Security Documentation.

Cyber Governance Issues: Net Neutrality, Internet Names and Numbers, Copyright and Trademarks, Email and Messaging.

UNIT IV

Cyber User Issues: **Malvertising, Impersonation, Appropriate Use, Cyber Crime, Geo location, Privacy.**

Cyber Conflict Issues: ***Intellectual property Theft, Cyber Espionage, Cyber Sabotage, Cyber Welfare.***

Cyber Management Issues: Fiduciary Responsibility, Risk Management, Professional Certification, Supply Chain, Security Principles, Research and Development.

Cyber Infrastructure Issue: Banking and finance, Health care, Industrial Control systems.