Dr. RamManohar Lohia Avadh University, Ayodhya U.P.
Study and Evaluation Scheme
MCA (Master of Computer Applications)
(Effective From Session 2020-21)
Year – I Semester – I

MCA 106 – CYBER SECURITY & INFORMATION SYSTEM

Course Details

- **Paper No.: VI**

- **Course Code: MCA 106**

- **Course Title: CYBER SECURITY & INFORMATION SYSTEM (Theory)**

- **Marks Distribution: Internal = 50, External = 100, Total = 150**

🎯 **Goal**

Achieve the three fundamental goals of cyber security: Confidentiality, Integrity, and Availability.

Enable information systems to support organizational decision-making and strategic advantage.

Outcomes:

- Protect confidentiality of critical data and intellectual property

- Analyze and mitigate software vulnerabilities

- Understand post-compromise security analysis

- Develop evolving cyber security strategies

- Leverage Management Information Systems for competitive advantage

- Evaluate and synthesize business information for strategic decisions

UNIT I — Introduction to Information Systems & Security

- Information systems overview and types

- Development of information systems

- Introduction to information security and its need

- Threats to information systems

- Information assurance, cyber security, and security risk analysis

UNIT II — Application Security & Threats

- Application security: Database, E-mail, Internet

- Data security: Backup, archival storage, disposal of data

- Security technologies: Firewalls, VPNs, Intrusion Detection, Access Control

- Security threats: Viruses, Worms, Trojan Horse, Bombs, Trapdoors, Spoofs, Macro viruses

- Network attacks and denial of service

- Security threats to e-commerce: Electronic Payment Systems, e-Cash, Credit/Debit cards

- Digital signatures and public key cryptography

UNIT III — Developing Secure Information Systems

- Application development security

- Information security governance & risk management

- Security architecture & design

- Security issues in hardware, data storage, downloadable devices

- Physical security: Access control, CCTV, intrusion detection

- Backup security measures

UNIT IV — Security Policies & Cyber Laws

- Importance of security policies: WWW, Email, corporate policies

- Policy review, publishing, and notification requirements

- Information security standards: ISO, IT Act, Copyright Act, Patent Law, IPR

- Cyber laws in India: IT Act 2000, Intellectual Property Laws, Software License, Semiconductor Law

UNIT V — Business Applications & Advanced Concepts

- Business applications: Internet & e-commerce, Intranet, Extranet, Enterprise solutions

- Information systems for business operations, managerial decision support, strategic advantage

- Planning & control: Organizational planning, planning process, computational support, control process

- Managing IT: Enterprise & global management, security & ethical challenges, planning & implementing changes

- Advanced concepts: ERP, Supply Chain Management, CRM, Procurement Management