Annexure I

UNIT 1: INTRODUCTION TO CYBER WORLD (Theory-1, Lab-1)

What is the Cyber World, Advantage of Cyber World, Disadvantage of Cyber World, Understanding Information Security, Introduction to CIA TRIAD, Goals of Information Security
Fundamentals of Information Security CIA triad

UNIT 2: Hacking Phases (Theory-2, Lab-6)
Reconnaissance, Scanning, Gaining Access, Maintaining Access, Clearing Track, (Tools: Nmap, OpenVas, Kalilinux) Tracing-E-Mail, Mobile Phone, Denial of Service attacks and countermeasures

UNIT 3: EMAIL AND COUNTEREASURES (Theory-1, Lab-2)

E-Mail, Protocols, Spoofing, Phishing Attacks, Social Engineering Attack, Fake mailing Attack, Countermeasures.

UNIT 4: SECURING SOCIAL MEDIA (Theory-1, Lab-4)

Introduction to Facebook, Facebook Phishing Attacks, Analyzing Fake & Real Profile of Facebook, Facebook Fake Messaging Attack, Facebook Tracing Method Techniques, How to find if your Facebook Account has been hacked or not, Facebook Account security with Email & SMS Notifications, Security Issues of Facebook, Introduction to WhatsApp, Working Mechanism of WhatsApp, Security Issues and vulnerability in WhatsApp, Configuring Multiple Numbers in WhatsApp, WhatsApp Monitoring & Spying Techniques, WhatsApp Scams and Security Methods, Tips to Make WhatsApp More Secure and Private, WhatsApp Messages, Photos, Video Recovery Methods, WhatsApp Account Tracking Methods, Use WhatsApp end-to-end encryption.

UNIT 5: CRYPTOGRAPHY (Theory-8, Lab-4)

Introduction to cryptography, Basic Encryption concepts, Symmetric- Asymmetric cryptography and cryptographic algorithms, cryptography fundamentals, Private Key Encryption, Public Key Encryption, Cryptographic algorithm and protocols Cyphering Message, Symmetric Key Encryption algorithm DES/3DES, ADES, Public Key Algorithm, Diffie – Hellman Key Exchange, RSA, Megamall. Hash Functions, MD 5, SHA-1, HMAC, Public Key Infrastructure, PKI Standards and Management, X.500, X.509, Understanding Digital certificate and Signatures, IDSEC, PGP, SSL/TLS

UNIT 6: PRIVACY ON THE INTERNET (Theory-2, Lab-4)

What is web Browser, Uniform Resource Locator (URL), Types of web Browsers, Browser Cookies, Browser extensions, Pop-ups, Scripts, Plug-ins and add-ons, About HTTP & HTTPS, Save Login ID & Password Policies, Private web Searching, Java Script Enabling /Disabling, Web of Trust (All Browsers). Content filtering, Content Advisor in Internet Explorer, Enabling Content Advisor in Internet Explorer 10/11, Spam filter, K9 web Protection, Difference between K9 and other filtering software.

UNIT 7: SECURING WIRELESS NETWORK (Theory-2, Lab-4)

Terms in wireless network, Wireless Standards, Common Wi-Fi Security, Wi-Fi Security Tips.

UNIT 8: SECURING AN OPERATING SYSTEM (Theory-2, Lab-3)

Patching the Operating System, Updating Windows Operating system, Password Policies, User Account Policies, Security Tools for Windows Operating System (Malicious Software Removal Tool, Microsoft Baseline Security Analyzer, Microsoft Security Compliance Manager Tool, UrlScan Security Tool, Microsoft Security Essentials, PC Locker Pro, Steady state)

UNIT 9: PROTECT FILES AND FOLDERS IN WINDOWS OS (Lab-3)

Securing Files & Folders, Securing File Sharing, Securing Files & Folders using third party Utility
UNIT 10: Using Antivirus in Windows Operating System (Lab-2)

Virus, Worm and Malware, Symptoms of an Infected Computer, Introduction to Antivirus, How does Antivirus Software Work, Antivirus Software Scanning Detection Processes, Different Types of Antivirus, Comparison Between Different Antivirus Software, Antivirus Program in Windows Operating System

UNIT 11: UNDERSTANDING FIREWALL (Theory-1, Lab-3)

Introduction to Windows Firewall, Install and configure a personal firewall, Creating Inbound &Outbound Rules. Types of Firewall, ip tables Linux Firewall, IDS, Snort IDS.

UNIT 12: LOGS AND LOG ANALYSIS (Tools: Syslog, Splunk SIEM Tools**) (Theory-2, Lab-3)**

UNIT 13: APPLICATION SECURITY (Theory-2, Lab-4)

OWASP TOP10, Buffer Overflow, SQL Injection, Cross Site Scripting, Session Hijack, Secure Coding Practices, Web Application Vulnerability, Scanning Tool.

UNIT 14: Overview of IoT Security (Theory-2, Lab-3)
Understand IoT general models and security challenges, Recognize IoT security and vulnerability threats. Understand different IoT protocols and their security measures, interpret how to secure an IoT environment Interpret different IoT types of attacks.

UNIT 15: Overview of Cloud Security (Theory-2, Lab-3)
Design a simple cloud service and select appropriate security measures to protect it, Associate user roles with appropriate entities deploying or using a cloud service, Assess levels of risk and recent vulnerabilities that apply to cloud services, Learn and apply basic network security techniques in the cloud environment.

UNIT 15: BACK UP AND RESTORE IN WINDOWS OS (Theory-1, Lab-3)

Back up in Windows 8/10, Create a restore point, restoring to restore point, Creating /Restoring from a System image.

UNIT 16: DIGITAL PAYMENT AND SECURITY(Lab-5)

Cashless Economy, Advantages of a cashless economy, Challenges in transitioning to a Cashless society, Indian Scenario Payments Terminology, Types of Cashless Modes, and Payment Processing, Introduction to Debit Card , Credit Card, Virtual card, Point of Sales(PoS), Internet Banking, Various kinds of frauds in banking. Government Initiatives, Use of USSD, UPI, AEPS, e-Wallet etc, Security Terminology, Security Concerns in Digital Payment System, Do & Don't in using Digital Payment System

UNIT 17: OVERVIEW OF CYBER FORENSICS (Theory-1, Lab-3)
Phases (Preservation, Identification Extraction, Documentation, Interpretation.

Total- 90 Hrs. (Theory-30, Lab-60)