

CYBER SECURITY SYLLABUS

Module 1: Introduction to Cyber Security

- What is cyber security
- Importance of cyber security
- Types of cyber threats (malware, phishing, ransomware)
- CIA Triad (Confidentiality, Integrity, Availability)
- Cyber security domains overview

Module 2: Networking Fundamentals

- Basics of computer networks
- OSI model
- TCP/IP model
- IP addressing and subnetting
- Common network protocols (HTTP, HTTPS, FTP, DNS)

Module 3: Operating System Security

- Windows security basics
- Linux security basics
- File permissions
- User management
- System hardening

Module 4: Cryptography

- Basics of cryptography
- Encryption and decryption
- Symmetric vs asymmetric encryption
- Hashing algorithms
- Digital signatures

Module 5: Web Security

- Common web vulnerabilities
- SQL Injection
- Cross-Site Scripting (XSS)
- Cross-Site Request Forgery (CSRF)
- Secure coding practices

Module 6: Network Security

- Firewalls
- Intrusion Detection System (IDS)
- Intrusion Prevention System (IPS)
- VPN basics
- Network monitoring

Module 7: Ethical Hacking

- Introduction to ethical hacking
- Footprinting and reconnaissance
- Scanning and enumeration
- Vulnerability assessment
- Penetration testing basics

Module 8: Malware & Threat Analysis

- Types of malware
- Virus, worm, trojan
- Ransomware attacks
- Malware detection techniques

Module 9: Security Tools

- Introduction to security tools
- Network scanning tools

- Password cracking tools
- Vulnerability scanners
- Packet analyzers

Module 10: Identity & Access Management

- Authentication vs authorization
- Multi-factor authentication (MFA)
- Role-based access control
- Password policies

Module 11: Cloud Security

- Basics of cloud computing
- Cloud security risks
- Securing cloud applications
- Shared responsibility model

Module 12: Mobile Security

- Mobile threats
- Securing Android and iOS apps
- App permissions
- Mobile data protection

Module 13: Incident Response

- Incident response lifecycle
- Identifying security incidents
- Handling breaches
- Recovery and reporting

Module 14: Digital Forensics

- Introduction to forensics

- Evidence collection
- Data analysis
- Reporting findings

Module 15: Security Policies & Compliance

- Security policies
- Risk management
- Compliance standards (ISO, GDPR basics)
- Security audits

Module 16: Real-World Projects

- Vulnerability assessment project
- Network security setup
- Web security testing
- Incident response simulation