CYBER SECURITY & ETHICAL HACKING

Webcooks



6-Month Course Syllabus

For: **B.Tech CSE / IT Students**

MONTH 1 — Networking & Linux Fundamentals

- Introduction to Cyber Security
- OSI Model, TCP/IP and Networking Protocols
- IP Addressing, Subnetting, DNS, DHCP and HTTP/HTTPS
- Routers, Switches, Ports and Firewalls
- Linux Installation, File System, Commands and Permissions
- Bash Scripting Fundamentals

MONTH 2 — Cyber Security Fundamentals

- CIA Triad and Security Principles
- Cyber Threats, Vulnerabilities, Malware and Phishing
- Authentication and Authorization
- Cryptography, Hashing and Encryption
- Firewalls, VPN, IDS and IPS
- Security Policies and Risk Management

MONTH 3 — Python for Cyber Security & Network Analysis

- Python Fundamentals, Functions and Modules
- File Handling, Regular Expressions and Exceptions
- Python Sockets and Networking Basics
- Log Analysis and Security Automation
- Wireshark and Packet Analysis
- Nmap and Authorized Network Scanning

MONTH 4 — Web Application Security

- Web Architecture, HTTP and HTML/JavaScript/SQL Basics
- OWASP Top 10
- SQL Injection Concepts and Prevention
- Cross-Site Scripting (XSS)
- Authentication, Session and Access Control Security
- Burp Suite Basics and Authorized Web Testing

MONTH 5 — Ethical Hacking & Penetration Testing

- Ethical Hacking Methodology and Legal Scope
- Reconnaissance and Information Gathering
- Network Scanning and Enumeration
- Vulnerability Assessment
- Kali Linux and Metasploit Fundamentals in Isolated Labs
- Password Security, Testing Documentation and Reporting

MONTH 6 — SOC, Digital Forensics & Final Project

- Security Operations Center (SOC) Fundamentals
- Security Monitoring, Log Management and SIEM Basics
- Threat Detection and Incident Response
- Introduction to Digital Forensics
- System Hardening, Remediation and Security Reporting
- Capstone Project and Technical Interview Preparation

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