



Cyber Security Course

Duration: 6–8 Months (Professional Level)

Module 1: Introduction to Cyber Security

Duration: 1 Week

Topics:

- Introduction to Cyber Security
- Importance of Cyber Security in Digital World
- Types of Cyber Threats
- Malware, Virus, Trojan, Ransomware
- Cyber Security Domains
- Ethical vs Malicious Hackers
- CIA Triad (Confidentiality, Integrity, Availability)

Tools Introduction:

- Basic Security Tools Overview
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Module 2: Networking Fundamentals

Duration: 3 Weeks

Topics:

- Computer Network Basics
- LAN, WAN, MAN
- OSI Model
- TCP/IP Model
- IP Addressing
- Subnetting
- MAC Address





- DNS, DHCP, HTTP, HTTPS
- Ports & Protocols

Practical:

- Network configuration
- Packet flow understanding

Tools:

- Wireshark
 - Packet Tracer
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Module 3: Operating System Security

Duration: 3 Weeks

Topics:

- Windows Security Basics
- Linux Security Basics
- File System Security
- User Accounts & Permissions
- Process Management
- System Hardening

Practical:

- Windows Security Settings
- Linux Terminal Commands
- Security Configurations

Tools:

- Kali Linux
 - VirtualBox / VMware
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Module 4: Ethical Hacking Fundamentals





Duration: 4 Weeks

Topics:

- Ethical Hacking Introduction
- Footprinting & Reconnaissance
- Information Gathering
- Scanning Networks
- Enumeration
- Vulnerability Assessment

Practical:

- Website Information Gathering
- Network Scanning

Tools:

- Nmap
- Whois
- Maltego
- Recon-ng

Module 5: Web Application Security

Duration: 4 Weeks

Topics:

- Website Architecture
- Client Server Model
- Common Web Vulnerabilities

Major Attacks:

- SQL Injection
- Cross Site Scripting (XSS)
- Cross Site Request Forgery (CSRF)
- File Upload Vulnerability
- Authentication Bypass

Practical:





- Testing Vulnerabilities

Tools:

- Burp Suite
 - OWASP ZAP
 - Nikto
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Module 6: System Hacking

Duration: 3 Weeks

Topics:

- Password Attacks
- Privilege Escalation
- Keyloggers
- Trojans & Backdoors
- Maintaining Access
- Covering Tracks

Tools:

- Hydra
 - Metasploit Framework
 - John The Ripper
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Module 7: Network Security

Duration: 3 Weeks

Topics:

- Firewalls
- IDS / IPS
- VPN Security
- Network Monitoring
- Network Attacks





Attacks:

- Man in the Middle Attack
- DoS / DDoS
- ARP Spoofing

Tools:

- Snort
 - Wireshark
 - Ettercap
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Module 8: Wireless Network Security

Duration: 2 Weeks

Topics:

- WiFi Security Basics
- WPA / WPA2 / WPA3
- Wireless Attacks

Attacks:

- WiFi Cracking
- Evil Twin Attack
- Deauthentication Attack

Tools:

- Aircrack-ng
 - Kismet
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Module 9: Malware Analysis

Duration: 2 Weeks

Topics:





- Malware Types
- Virus Analysis
- Static Analysis
- Dynamic Analysis

Tools:

- VirusTotal
- Sandbox Tools

Module 10: Cyber Laws & Digital Forensics

Duration: 2 Weeks

Topics:

- Cyber Laws
- IT Act
- Digital Evidence
- Incident Response
- Forensic Investigation

Tools:

- Autopsy
- FTK Imager

Module 11: Cloud Security Basics

Duration: 2 Weeks

Topics:

- Introduction to Cloud Computing
- Cloud Security Risks
- Identity & Access Management





- Data Protection in Cloud

Platforms:

- AWS Security Basics
 - Azure Security Basics
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Module 12: Cyber Security Tools Mastery

Duration: 3 Weeks

Industry Tools:

- Kali Linux
 - Metasploit
 - Nmap
 - Burp Suite
 - Wireshark
 - OWASP ZAP
 - Nessus
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Module 13: Security Operations & Monitoring

Duration: 2 Weeks

Topics:

- SOC (Security Operation Center)
- SIEM Basics
- Log Monitoring
- Threat Intelligence

Tools:

- Splunk Basics
- ELK Stack





Module 14: Capstone Project

Duration: 3 Weeks

Students will perform:

- Vulnerability Assessment
- Network Security Audit
- Web Application Security Testing

Project Examples:

- Website Security Testing
- Network Penetration Testing
- Cyber Attack Simulation Lab

Certifications Preparation

Students can prepare for:

- **CEH (Certified Ethical Hacker)**
- **CompTIA Security+**
- **CompTIA CySA+**
- **CISSP (Certified Information Systems Security Professional)**

Course Highlights

- 70% Practical Training
- Real World Cyber Attack Labs
- Live Projects
- Internship Opportunity
- Placement Assistance

