



Inversion Consultancy LLP

Organizing Entity



SkillForge

Delivery Partner

CYBER SECURITY COURSE CURRICULUM

01

Induction Class (optional)



1 Hour

02

- Internet
- Network

History of Internet:

- Internet life cycle
- Submarine cable map Types of networks
- Topologies
- OSI model
- TCP/IP model
- IP address
- Subnet masking



1 Hour + 15 Min Doubts

03

- Operating system
- Introduction to Ethical Hacking

- Kernel's BIOS Functions of BIOS
- Architectures of OS
- Who is a Hacker
- Skills of a Hacker
- Types of Hackers
- Reasons for Hacking
- Who are at the risk of Hacking attacks
- Effects of Computer Hacking on an organization The Security,
- Functionality & Usability
- Triangle
- What is Ethical Hacking
- Why Ethical Hacking is Necessary
- Scope & Limitations of Ethical Hacking
-
-
-



2 Hour + 15 Min Doubts



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04

- **Foot printing and Reconnaissance**

- What is Foot Printing
- Objectives of Foot Printing
- Finding a company's details
- Finding a company's domain name
- Finding a company's Internal URLs
- Finding a company's Server details
- Finding the details of domain registration
- Finding the range of IP Address
- Finding the DNS information
- Finding the location of servers
- Traceroute analysis
- Tracking e-mail communications



1 Hour + 15 Min Doubts

05

- **Scanning**
- **Hacking Web Servers & Web Applications**

- What is network scanning
- Objectives of network scanning
- Finding the live hosts in a network
- SNMP Enumeration
- SMTP Enumeration
- DNS Enumeration
- Finding open ports on a server
- Finding the services on a server
- OS fingerprinting
- Server Banner grabbing tools
- What is a Vulnerability Scanning
- What is a proxy server
- How does proxy server work
- Why do hackers use proxy servers • What is a TOR network
- Why hackers prefer to use TOR networks
- What is a web server
- Different webserver applications in use
- Why are web servers hacked & its consequences
- Directory traversal attacks
- Website defacement
- Website password brute forcing
- 1 Hour + 15 Minutes Doubt



2 Hour + 15 Min Doubts



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06

- Cross site scripting

Persistent XSS, where the malicious input originates from the website's database. **Reflected XSS**, where the malicious **DOM- based XSS**, originates from the victim's request. where the vulnerability is in the clientside code rather than the serverside code. input



1 Hour + 15
Min Doubts

07

- SQL Injection
- Session Hijacking
- Denial of Service

- What is SQL Injection Effects of SQL Injection attacks
- Types of SQL Injection attacks
- SQL Injection detection tools What is session hijacking
- Dangers of session hijacking attacks
- Session hijacking techniques
- How to defend against session hijacking
- What is a DoS attack
- What is a DDoS attack
- Symptoms of a Dos attack
- DoS attack techniques
- What is a Botnet



2 Hour + 15
Min Doubts



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08

- **Social Engineering**

Phishing

- What is Phishing
- How Phishing website is hosted
- How victims are tricked to access
- Phishing websites
- How to differentiate a Phishing webpage from the original webpage
- How to defend against Phishing attacks
- Homograph attack
-



1 Hour + 15 Min Doubts

09

- **Evading Firewalls, IDS & Honeypots**
- **Kali Linux**

What is a Firewall

- What are the functions of a Firewall
- Types of firewalls
-
- What is an IDS
- How does an IDS work
- What is a honeypot
- What is Kali Linux
- How Kali Linux is different from other Linux distributions
- What are the uses of Kali Linux
- Tools for Footprinting, Scanning & Sniffing
- What is Metasploit framework
- Using Metasploit framework to attack Wiindows machines
- Using Metasploit framework to attack Android devices
-



2 Hour + 15 Min Doubts



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10

- **System Hacking**

What is system Hacking · Goals of System Hacking

- Password Cracking
 - Password complexity
 - Finding the default passwords of network devices and softwares
 - Password cracking methods
 - o Online password cracking
 - Man-in-the-middle attack
 - Password guessing
 - o Offline password
- cracking
 - Brute force cracking
 - Dictionary based cracking
 - USB password stealers
 - Elcomsoft Distributed password recovery tools
 - Active password changer
- What is a keylogger
- How to deploy a keylogger to a remote pc
- How to defend against a keylogger
-



**1 Hour + 15
Min Doubts**

11

- **Mobile Hacking**

- Sniffers

What is mobile Hacking

Goals of mobile Hacking · Countermeasures

- What is a sniffer
 - How sniffer works
 - Types of sniffing
 - Active sniffing
 - Passive Sniffing
 - What is ARP
 - ARP poison attack
 - Threats of ARP poison attack
 - How MAC spoofing works
- **MAC Flooding**
 - How to defend against MAC Spoofing attacks
 - How to defend against Sniffers in network



**2 Hour + 15
Min Doubts**



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12

- **Wireless Hacking**

- Types of wireless networks Finding a Wi-Fi network
- Types of Wi-Fi authentications
- Using a centralized authentication server
- Using local authentication
- Types of Wi-Fi encryption methods
- WEP WPA WPA2
- How does WEP work
- Weakness of WEP encryption
- How does WPA work
- How does WPA2 work
- Hardware and software required to crack Wi-Fi networks
- How to crack WEP encryption
- How to crack WPA encryption
- How to crack WPA2 encryption
- How to defend against Wi-Fi cracking attack
-
-



**1 Hour + 15
Min Doubts**



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13

- Malware
- IoT Hacking

- What is malware
- Types of malware Virus
- What is a virus program
- What are the properties of a virus program
- How does a computer get infected by virus
- Types of virus
- Virus making tools
- How to defend against virus attacks Worm
- What is a worm program
- How worms are different from virus
- Trojan
- What is a Trojan horse
- How does a Trojan operate
- How to defend against Trojans
- Spyware
- What is a spyware
- Types of spywares
- How to defend against spyware
- Rootkits
- What is a Rootkit
- Types of Rootkits
- How does Rootkit operate
- How to defend against Rootkits



Hour + 15
Min Doubts

11

- Cryptography
- Cloud security

- What is a sniffer Introduction to cloud
- Consequences
- Mitigation Introduction
- Symmetric key
- Asymmetric key
- public key
- private key



1 Hour + 15
Min Doubts