



Key Topics:

- IP Addressing Network Devices and Packet Analysis
- Operating Systems (Windows, Unix/Linux)
- Troubleshooting network problems
- SOC Operations
- Network Monitoring

COURSE CONTENT

Module 1: Introduction to Cyber security

- What is Cyber security
- Understanding the Cybersecurity terminology
- Components of Cybersecurity
 - Networking
 - Server administration
 - Security Operations Center

Module 2: Fundamentals of Networking

- Introduction to Networking
- Understanding Networks and Networking
- Types of Networks: LAN, MAN, WAN, and Internet
- Network Topologies: Bus, Ring, Star, and Mesh
- Essential Network Components: NIC Cards, MAC Addresses, Media, and Devices (Hubs, Switches, Routers, Firewalls)
- OSI Reference Model and TCP/IP Model

Module 3: Basics of Operating Systems

- Introduction to Operating Systems
- Overview of Windows, Linux, and Mac OS

- Server vs. Client Operating Systems
- Installation Processes for Windows Server 2022, Windows 11, Ubuntu Server, and Ubuntu Client

Module 4: Fundamentals of Networking

- Understanding LAN Networks
- Setting up a LAN: Components and Functions
- Working with Hubs, Switches: Broadcast Traffic, Flooding, MAC Tables, Unicast

Module 5: Principles of IP Addressing

- Understanding IP Addresses
- Types of IP Addressing: IPv4 and IPv6
- Subnetting Techniques

Module 6: Configuring, Administering, and Managing Windows Server

- Active Directory Setup and Management
- Domain and Workgroup Models
- User and Group Policies
- File and Printer Sharing
- DHCP and DNS Services
- Internet Information System (IIS)

Module 7: Configuring, Administering, and Managing Linux Server

- Linux Operating System Basics
- Linux Filesystem and User Accounts
- File Permissions and Package Management
- Setting up Web and FTP Servers

Module 8: Implementing WAN Connectivity between Multiple Organization Locations

- Introduction to Routers and Their Functions
- Configuring Cisco Routers
- WAN Connectivity and Routing Principles
- Types of Routing: Static, Dynamic, and Default

Module 9: Implementing Internet Connectivity

- Network Address Translation (NAT) and Port Address Translation (PAT),
- Static NAT
- Configuring Organization Routers
- Configuring Home WiFi Routers
- WiFi Security for Home Users

Module 10: System and Network Troubleshooting Techniques

- Troubleshooting System, LAN, and WAN Connectivity Issues

Module 11: Introduction to Cloud Technologies

- Understanding Cloud Computing
- Types of Cloud Technologies: SAAS, PAAS, IAAS
- Overview of Cloud Service Providers: AWS, Azure, GCP
- Creating Cloud Machines on AWS, Azure, and GCP

Module 12: Commonly used Protocols & Ports

- ARP Protocol
- DHCP Protocol
- DNS Protocol
- HTTP Protocol
- FTP Protocol
- SMTP Protocol
- SSH Protocol
- Telnet Protocol

Module 13: Cyber Threats and Incident Response

- **Common Cyber Threats**
- **Host discovery**
- **Service enumeration**
- **Vulnerability scanning**
- **Web application attacks**
 - **Directory traversal**
 - **Cross-site scripting**
 - **SQL Injection**
- **Password cracking**
 - **Brute force attack**
 - **Dictionary attack**
 - **Phishing attack**
- **Man-in-the-middle attack**
- **Denial of Service (DoS)**
- **Distributed Denial of Service (DDoS)**
- **Malware types**
 - **Virus**
 - **Worms**
 - **Trojans**
 - **Ransomware**
- **Incident Response**

Module 14: Security Operations Centre (SOC)

- What is SOC
- Roles and responsibilities of SOC
- Tools & Technologies in SOC
 - Firewall
 - IDS
 - IPS
 - Next gen. Firewall
 - UTM
 - SIEM
 - Endpoint Detection and Response (EDR)
- Security Information and Event Management (SIEM)
 - What is SIEM
 - Functions of SIEM
 - SIEM dashboard and alerts

Module 15: Best Practices in Cyber security

