ISOEH
Indian School Of Ethical Hacking
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CCNA Essentials Syllabus

Module 1: Introduction *2 Hours - 6 Topics*

- What is Networking? *(Day 1)*
- What is Internet? *(Day 1)*
- LAN, MAN, WAN, Topology *(Day 1)*
- Bits,Bytes and Octets *(Day 1)*
- What is Packet Tracer? *(Day 1)*
- Packet Tracer Installation *(Day 1)*

Module 2: OSI LAYER *2 Hours - 5 Topics*

- What is OSI Layer *(Day 2)*
- Explain 7 layers *(Day 2)*
- Brief explaination for TCP Header *(Day 2)*
- Brief explaination for 3 way Handshake *(Day 2)*
- Comparison between OSI and TCP/IP Model *(Day 2)*

Module 3: Addresses *2 Hours - 9 Topics*

- Introduction to IP and MAC Address *(Day 3)*
- Use of IP and MAC Address *(Day 3)*
- What is OUI and DI? *(Day 3)*
- IANA, ICANN *(Day 3)*
- IPv4(Classful Addressing) *(Day 3)*
- Class A,B,C,D,E *(Day 3)*
- Public IP Private IP *(Day 3)*
- Loopback Address and APIPA *(Day 3)*
- Default Subnet Mask *(Day 3)*

Module 4: P Addressing(Subnetting) *2 Hours - 6 Topics*

- What is Subnetting? *(Day 4)*
- What is FLSM and VLSM? *(Day 4)*
- What is Subnet Mask? *(Day 4)*
- What is CIDR? *(Day 4)*
- Calculate FLSM for Class C Address *(Day 4)*
- Calculate VLSM for 4-6 Network Requirement with variable Host *(Day 4)*

Module 5: Router, DHCP Configuration *2 Hours - 8 Topics*

- How to use Packet Tracer? *(Day 5)*
- Network setup using 2 pc and switch *(Day 5)*

- Router Components and Different Modes (also talk about router memory and how router saves configurations) *(Day 5)*
- Router Configuration (including Router password set and bypass) *(Day 5)*
- Network setup using 2 pc, switch and router *(Day 5)*
- DHCP Configuration using 4pcs(Classful & Classless) *(Day 5)*
- What is Telnet, ssh, ftp/tftp *(Day 5)*
- Configure SSH with security in Router *(Day 5)*

Module 6: Switching Concept(VLAN) *2 Hours - 5 Topics*

- What is Switching? (Explain ARP as well) *(Day 6)*
- What is VLAN? *(Day 6)*
- Different Modes(Access, Dynamic and Trunk) *(Day 6)*
- Configure VLAN (2-3 VLANS) *(Day 6)*
- Configure Intervlan Routing(Using Router with 2 interfaces, Router on Stick) *(Day 6)*

Module 7: Switching Concept(VTP) *2 Hours - 2 Topics*

- What is VTP? *(Day 7)*
- Configure VTP(Server, Client, Transparent Mode) with 4 Switches *(Day 7)*

Module 8: Switch Security(Port Security, DHCP Snooping) *2 Hours - 4 Topics*

- What is Port Security? *(Day 8)*
- Configure Port Security(Restrict, Protect, Shutdown Mode)(Sticky,Dynamic MAC Address, Maximum Address) *(Day 8)*
- What is DHCP Snooping? *(Day 8)*
- Configure DHCP Snooping with 2 Servers(DHCP Configured inside) and 4 PCs *(Day 8)*

Module 9: TP, RSTP *2 Hours*

Module 10: IGP and EGP *2 Hours - 7 Topics*

- What is Routing? (also discuss CDP, LLDP) *(Day 10)*
- What is IGP and EGP? *(Day 10)*
- Explain Different Vectors and Metrics *(Day 10)*
- Different protocols under IGP and EGP *(Day 10)*
- What is AS number and AD value? *(Day 10)*
- STATIC routing, Default Routing *(Day 10)*
- Dynamic Routing (Intro) *(Day 10)*

Module 11: OSPF v2 *2 Hours - 5 Topics*

- Configure and verify single area and Multi area OSPFv2 *(Day 11)*
- Neighbor adjacencies *(Day 11)*
- Point to point *(Day 11)*

- DR/BDR selection (Explaination) *(Day 11)*
- Router ID *(Day 11)*

Module 12: ACL *2 Hours - 4 Topics*

- What is and use of ACL? *(Day 12)*
- What is Standard and Extended ACL? *(Day 12)*
- Standard(Name,Number) ACL Configuration with 2 Routers blocking/allowing a network/host for hosts/network *(Day 12)*
- Extended(Name,Number) ACL Configuration with 2 Routers blocking/allowing a network/hosts for ICMP, HTTP, HTTPS, FTP, TELNET *(Day 12)*

Module 13: NAT, PAT *2 Hours - 5 Topics*

- What is NAT? Different Types of NAT *(Day 13)*
- Configure Static NAT (Only Inside Rule) with two router *(Day 13)*
- Configure Dynamic NAT (Only Inside Rule) with two router using Pool and Interface *(Day 13)*
- What is PAT? *(Day 13)*
- Configure PAT (Only Inside Rule) with two router using Pool and Interface *(Day 13)*

Module 14: Wireless *2 Hours - 3 Topics*

- WLAN 4 way handshake *(Day 14)*
- Describe wireless security protocol (WPA,WPA2, WPA3) *(Day 14)*
- Configure and verify WLAN within the GUI using WPA2 PSK *(Day 14)*

Module 15: INTERNAL EXAM *2 Hours*

Module 16: WAN *2 Hours - 3 Topics*

- Explain Different WAN Technologies(Leased Line, Circuit Switching, Packet Swtching) *(Day 16)*
- What is Point to Point and Multiaccess Link? *(Day 16)*
- Explain and Configure different Point to Point Link encapsulation technology(HDLC, PPP --> PAP, CHAP) *(Day 16)*

Module 17: PV6 BASIC *2 Hours - 7 Topics*

- Why IPv6? *(Day 17)*
- How to write IPv6 Address? *(Day 17)*
- Different Types of IPv6 Address(Unicast, Multicast, Anycast) *(Day 17)*
- Different Types of Unicast Address(Global Unicast, Unique local, link local) *(Day 17)*
- Configure and Verify IP address on Router with 2PCs *(Day 17)*
- Configure and Verify Static Autoconfig Address *(Day 17)*
- Configure and Verify Static Routing with 2 Routers *(Day 17)*

Module 18: AA, TACACS+ and RADIUS *2 Hours - 3 Topics*

- Define ICMP, DNS *(Day 18)*
- Explain AAA and the working *(Day 18)*
- Discuss the differences between TACACS+ and RADIUS *(Day 18)*

Module 19: SNMP, DMZ *2 Hours - 6 Topics*

- What is SNMP? Different SNMP Version *(Day 19)*
- What is MIB,OID? What is SNMP Agent and Manager? *(Day 19)*
- Different SNMP Queries *(Day 19)*
- What is DMZ? Why is used? *(Day 19)*
- Discuss How DMZ are formed? *(Day 19)*
- Configure SNMP in Packetracer *(Day 19)*

Module 20: ROXY, VPN *2 Hours - 5 Topics*

- What is Proxy? Why it is used? *(Day 20)*
- What is VPN? *(Day 20)*
- Different Types of VPN(Site-to-Site, Remote-access) *(Day 20)*
- Different VPN Technologies(GRE, DMVPN, IPSEC) *(Day 20)*
- Configure GRE in Packet tracer *(Day 20)*

Ethical Hacking Syllabus

Module 1: Introduction *2 Hours - 4 Topics*

- What is Ethical Hacking *(Day 1)*
- What are the different types of hackers *(Day 1)*
- Five phases of hacking *(Day 1)*
- Scope of Ethical Hacking *(Day 1)*

Module 2: Information Gathering *2 Hours - 4 Topics*

- Passive Information Gathering *(Day 2)*
- Active Information Gathering *(Day 2)*
- Foot-Printing *(Day 2)*
- OSINT *(Day 2)*

Module 3: Scanning *2 Hours - 5 Topics*

- Port Scanning *(Day 3)*
- Network Sweeping *(Day 3)*
- Vulnerability Scanning *(Day 3)*
- Service Version Detection *(Day 3)*
- OS Fingerprinting *(Day 3)*

Module 4: System Hacking *2 Hours - 4 Topics*

- Introduction to Metasploit Framework *(Day 4)*
- Introduction to Exploits & Payloads *(Day 4)*
- Type of Connections *(Day 4)*
- Exploit MS17-010 Vulnerability *(Day 4)*

Module 5: Basic Privilege Escalation *2 Hours - 3 Topics*

- Introduction to Privilege Escalation *(Day 5)*
- Types of Privilege Escalation *(Day 5)*
- Bypassuac and getsystem *(Day 5)*

Module 6: System Hacking (Cont) *2 Hours – 2 Topics*

- Android Hacking *(Day 6)*
- Software based vulnerabilities *(Day 6)*

Module 7: Introduction to Active Directory *2 Hours - 4 Topics*

- Introduction to Active Directory Components *(Day 7)*
- LDAP in Active Directory *(Day 7)*
- Active Directory Functionality *(Day 7)*
- Service Principal Name (SPN) *(Day 7)*

Module 8: Introduction to Kerberos *2 Hours - 5 Topics*

- Kerberos Basics and Overview *(Day 8)*
- Components of Kerberos (KDC, Ticket Granting Ticket, etc.) *(Day 8)*
- Kerberos Authentication Process *(Day 8)*
- Kerberos Tickets and Encryption *(Day 8)*
- Introduction to Kerberos Attacks *(Day 8)*

Module 9: Malwares *2 Hours - 5 Topics*

- Introduction to Malware *(Day 9)*
- Types of Malwares (Viruses, Worms, Trojans, etc.) *(Day 9)*
- Malware Analysis Techniques *(Day 9)*

- Common Malware Distribution Methods *(Day 9)*
- Malware Detection and Prevention *(Day 9)*

Module 10: Network Sniffing & MITM *2 Hours - 4 Topics*

- Introduction to Network Sniffing *(Day 10)*
- Passive vs. Active Sniffing *(Day 10)*
- Common Network Sniffing Tools *(Day 10)*
- Man-in-the-Middle (MITM) Attacks and Techniques *(Day 10)*

Module 11: Cryptography & Steganography *2 Hours - 4 Topics*

- Introduction to Cryptography *(Day 11)*
- Symmetric vs. Asymmetric Encryption *(Day 11)*
- Common Cryptographic Algorithms (e.g., AES, RSA) *(Day 11)*
- Steganography Techniques and Applications *(Day 11)*

Module 12: Wireless Network Hacking *2 Hours - 4 Topics*

- Introduction to Wireless Networks *(Day 12)*
- Types of Wireless Security Protocols (e.g., WEP, WPA, WPA2) *(Day 12)*
- Wireless Network Scanning and Enumeration *(Day 12)*
- Exploiting Wireless Vulnerabilities *(Day 12)*

Module 13: Website Attacks *2 Hours - 4 Topics*

- Introduction to Website Attacks *(Day 13)*
- How Website Attacks Work *(Day 13)*
- Types of Vulnerabilities Exploited *(Day 13)*
- Enumeration Techniques *(Day 13)*

Module 14: Cross-site scripting (XSS) *2 Hours - 4 Topics*

- Introduction to Cross-Site Scripting (XSS) *(Day 14)*
- Understanding How XSS Works *(Day 14)*
- Types of XSS Attacks (Reflected XSS, Stored XSS, DOM-based XSS) *(Day 14)*
- Techniques for Detecting and Exploiting XSS Vulnerabilities *(Day 14)*

Module 15: SQL Injection *2 Hours - 4 Topics*

- Introduction to SQL Injection (SQLi) *(Day 15)*
- Mechanism of SQL Injection *(Day 15)*
- Common Types of SQL Injection Attacks (Union-Based, Blind SQLi, Error-Based) *(Day 15)*
- Techniques for Exploiting SQL Injection Vulnerabilities *(Day 15)*

Module 16: Cross-Site Request Forgery (CSRF) *2 Hours - 4 Topics*

- Introduction to Cross-Site Request Forgery (CSRF) *(Day 16)*
- How CSRF Attacks Work *(Day 16)*
- Examples of CSRF Exploitation *(Day 16)*
- Prevention and Mitigation Strategies *(Day 16)*

Module 17: Website Attacks (cont) *2 Hours - 5 Topics*

- Understanding Cookie Stealing and Session Hijacking *(Day 17)*
- Techniques for Cookie Stealing and Session Hijacking *(Day 17)*
- Data Tampering Attacks on Websites *(Day 17)*
- Phishing Attacks: Methods and Impacts *(Day 17)*
- File Upload Vulnerabilities: Risks and Exploitation *(Day 17)*

Module 18: Introduction to IOT Hacking *2 Hours - 4 Topics*

- Introduction to IoT Security *(Day 18)*
- IoT Device Identification and Enumeration *(Day 18)*
- Exploiting IoT Communication Protocols *(Day 18)*
- Webcam Attacks on IoT Devices *(Day 18)*

Module 19: DDOS attacks & Cloud Hacking *2 Hours - 4 Topics*

- Introduction to DDoS Attacks *(Day 19)*
- Types of DDoS Attacks *(Day 19)*
- DDoS Attack Techniques *(Day 19)*
- Cloud Security Fundamentals *(Day 19)*

Module 20: IDS/IP *2 Hours - 4 Topics*

- Introduction to IDS/IPS *(Day 20)*
- Types of IDS (Network-based, Host-based) *(Day 20)*
- Types of IPS (Network-based, Host-based) *(Day 20)*
- Honeypots *(Day 20)*