

CCNA Essentials Syllabus

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)**

Addresses **2 Hours - 9 Topics**

- **Introduction to IP and MAC Address (Day 2)**
- **Use of IP and MAC Address (Day 2)**
- **What is OUI and DI? (Day 2)**
- **IANA, ICANN (Day 2)**
- **IPv4(Classful Addressing) (Day 2)**
- **Class A,B,C,D,E (Day 2)**
- **Public IP Private IP (Day 2)**
- **Loopback Address and APIPA (Day 2)**
- **Default Subnet Mask (Day 2)**

IP Addressing(Subnetting) **2 Hours - 6 Topics**

- **What is Subnetting? (Day 3)**
- **What is FLSM and VLSM? (Day 3)t**
- **What is Subnet Mask? (Day 3)**
- **What is CIDR? (Day 3)**
- **Calculate FLSM for Class C Address (Day 3)**
- **Calculate VLSM for 4-6 Network Requirement with variable Host (Day 3)**

OSI LAYER **2 Hours - 5 Topics**

- **What is OSI Layer (Day 4)**
- **Explain 7 layers (Day 4)**
- **Brief explanation for 3 way Handshake (Day 4)**
- **Brief explanation for TCP Header (Day 4)**
- **Comparison between OSI and TCP/IP Model (Day 4)**

ICMP, ARP, DNS **2 Hours - 2 Topics**

- **Define ICMP, ARP, DNS (Day 5)**
- **Explain the uses and working of ICMP, ARP, DNS (Day 5)**

Router, DHCP Configuration **2 Hours - 6 Topics**

- **How to use Packet Tracer? (Day 6)**
- **Network setup using 2 pc and switch (Day 6)**

- **Router Components and Different Modes (Day 6)**
- **Router Configuration (Day 6)**
- **Network setup using 2 pc, switch and router (Day 6)**
- **DHCP Configuration using 4pcs(Classful & Classless) (Day 6)**

IGP and EGP

2 Hours - 5 Topics

- **What is Routing? (Day 7)**
- **What is IGP and EGP? (Day 7)**
- **Explain Different Vectors and Metrics (Day 7)**
- **Different protocols under IGP and EGP (Day 7)**
- **What is AS number and AD value? (Day 7)**

Static, Default Routing (Classful and Classless)

2 Hours - 4 Topics

- **What is Static Routing? (Day 8)**
- **Static Routing Configuration using 2 and 3 Routers (Day 8)**
- **What is Default Routing? (Day 8)**
- **Default Routing Configuration using 2 and 3 Routers (Day 8)**

OSPF Single Area

2 Hours - 4 Topics

- **Explain OSPF, AD Value, Cost (Day 9)**
- **Explain Process ID, Wild Card Bits, Area (Day 9)**
- **7 stages of Establishment (Day 9)**
- **OSPF Single Area Configuration using 2-3 routers (Day 9)**

EIGRP

2 Hours - 3 Topics

- **Explain EIGRP, Cost, Metrics (Day 10)**
- **5 Stages of Establishment (Day 10)**
- **Configure EIGRP using 2-3 routers (Day 10)**

ACL

2 Hours - 5 Topics

- **What is and use of ACL? (Day 11)**
- **What is Standard and Extended ACL? (Day 11)**
- **Standard(Name,Number) ACL Configuration with 2 Routers (Day 11)**
- **Extended(Name,Number) ACL Configuration with 2 Routers (Day 11)**
- **Extended(Name,Number) ACL Configuration with 2 Routers blocking/allowing a network/hosts for ICMP,HTTP,HTTPS,FTP,TELNET (Day 11)**

NAT, PAT

2 Hours - 5 Topics

- **What is NAT? Different Types of NAT (Day 12)**
- **Configure Static NAT (Only Inside Rule) with two router (Day 12)**
- **Configure Dynamic NAT (Only Inside Rule) with two router using Pool and Interface (Day 12)**
- **What is PAT? (Day 12)**
- **Configure PAT (Only Inside Rule) with two router using Pool and Interface (Day 12)**

Switching Concept(VLAN) 2 Hours - 5 Topics

- **What is Switching? (Day 13)**
- **What is VLAN? (Day 13)**
- **Different Modes(Access, Dynamic and Trunk) (Day 13)**
- **Configure VLAN (2-3 VLANS) (Day 13)**
- **Configure Intervlan Routing(Using Router with 2 interfaces, Router on Stick) (Day 13)**

Switching Concept(VTP) 2 Hours - 3 Topics

- **What is VTP? (Day 14)**
- **Configure VTP(Server, Client, Transparent Mode) with 4 Switches (Day 14)**
- **STP, RSTP (Day 14)**

Switch Security (Port Security, DHCP Snooping) 2 Hours - 4 Topics

- **What is Port Security? (Day 15)**
- **Configure Port Security(Restrict, Protect, Shutdown Mode) (Sticky, Dynamic MAC Address, Maximum Address) (Day 15)**
- **What is DHCP Snooping? (Day 15)**
- **Configure DHCP Snooping with 2 Servers (DHCP Configured inside) and 4 PCs (Day 15)**

WAN 2 Hours - 4 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)**
- **Explain Multiaccess Link (Frame Relay) (Day 16)**

IPV6 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)**

AAA, TACACS+, RADIUS 2 Hours - 2 Topics

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

SNMP,DMZ 2 Hours - 5 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)**

PROXY, VPN

2 Hours - 4 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)**