

CCNA SYLLABUS

About the course

What we learn

Job opportunities

Chapter 1: Network devices

- What is network
- Building A network
- Client , server , Switch, router , firewall
- Packet tracer

Chapter 2: Interfaces and cables

- RJ 45
- Ethernet
- Network protocols
- Bits and bytes
- Ethernet standard
- UTP Cable
- Straight-through cable
- Cross over cable
- Connecting Devices

Chapter 3: Packet tracer Lab Connections

- Lab start
- Switch to pc
- Server connections
- Router to switch connection
- Router to Router connections

Chapter 4: OSI Model & TCP/IP Suit

- What is a networking model
- OSI Model
- TCP/IP Suit
- OSI Vs TCP/IP suit

Chapter 5: Intro to the CLI

- What is CLI
- How to connect a Cisco device
- Terminal emulator
- User EXEC Mode ,privilege EXEC mode
- Cisco IOS CLI Shortcuts
- Global configuration mode

- Enable password
- Saving the configuration
- Service password encryption
- Enable secret password
- Cancelling/deleting command

Chapter 6: Basic device security (Chapter 5 lab)

- Lab start

Chapter 7: Ethernet LAN Switching

- Ethernet frame
- Ethernet frame – preamble & SFD
- Ethernet frame – Destination source
- Ethernet frame – type length
- Ethernet frame FCS
- MAC Address
- Decimal Number System
- Hexadecimal Number system
- Unicast frame
- Mac address table
- Unknown unicast , flooding
- Known unicast , forwarding
- Mac learning , frame flooding
- Address resolution protocol
- ARP Request
- ARP Reply
- ARP Table
- GNS3
- Mac address table
- Clearing MAC Address table
- LAB – Practical

Chapter 8: IPV4 Addressing

- Intro to routing
- IPV4 Address
- Binary number systems
- Binary to decimal conversion
- Decimal to binary conversion
- IPV4 class
- Network address
- Show IP interface brief command
- IPV4 Address configuration
- Show interface command
- Configure interface description
- LAB- Practical

Chapter 9: Switch interfaces

- Switch interface
- Switch basic verification commands
- Configuring interface speed
- Half duplex , full duplex
- Ethernet hub
- Collision domain
- Speed duplex auto negotiation
- Interface errors
- LAB- Practical

Chapter10: Routing fundamentals

- What is routing
- Connected and local routes
- Stating routing
- Default gateway
- Default routing
- LAB-Practical
- Trouble shooting

Chapter 11: Subnetting

- IPV4 Subnetting
- Class C
- Class B
- Class A

Chapter 12: Vlan

- What is vlan
- Vlan configuration
- Trunk port
- 802.iq tag
- Vlan range
- Native vlan
- Trunk port configuration
- Router on a STICK (ROAS)
- LAB –Practical
- Native vlan on a router
- Layer3 switching and multilayer switching
- DTP and VTP
- LAB -practical

Chapter 13: Spanning tree protocols

- Redundancy in network
- STP
- Lab – Practical

Chapter 14: Dynamic Routing

- Dynamic route intro
- Floating static route
- RIP & EIGRP
- OSPF
- LAB – Practical

Chapter 15: FHRP

- HSRP
- VRRP
- GLBP
- HSRP LAB

Chapter 16: Basic of Layer 4

- TCP and UDP
- Port Numbers

Chapter 17: IPV6

- IPv6
- Ipv6 short
- Finding prefix ID
- Lab Configuration
- Static Routing
- Lab-Practical

Chapter 18: Access list

- What is access list
- ACL Logic
- ACL Types
- Standard Numbered ACLs
- Standard Named ACLs
- Extended ACLs
- LAB-Practical

Chapter 19: CDP and LLDP

- What is CDP and LLDP
- Lab-Practical

Chapter 20: NTP

- What is NTP
- Manual Time Configuration
- NTP Configuration
- Lab-Practical

Chapter 21: DNS

- What is DNS
- Basic function of DNS
- Lab-Practical

Chapter 22: DHCP

- What is DHCP
- Basic function of DHCP
- Lab-Practical

Chapter 23: Telnet and SSH

- What is Telnet and SSH
- Console port security
- Layer 2 switch management IP
- Telnet
- SSH
- Lab-Practical

Chapter 24: SNMP

- What is SNMP
- SNMP version
- SNMP message
- Lab-Practical

Chapter 25: Syslog

- What is Syslog
- Syslog message format
- Syslog facilities and severity levels
- Lab-Practical

Chapter 26: FTP and TFTP

- What is FTP and TFTP
- IOS file systems
- Lab-Practical

Chapter 27: NAT and PAT

- Private IP address
- What is NAT
- Static NAT
- Dynamic NAT
- PAT
- Lab-Practical

Chapter 28: QoS

- What is QoS
- IP Phones/Voice LAN
- PoE Switch
- Lab-Practical

Chapter 29: Security Fundamentals

- Key Security concepts
- Common attacks
- Password/Multi-Factor Authentication (MFA)
- Authentication, Authorization, Accounting (AAA)
- Security Program Elements
- What is Port Security
- Lab-Practical

Chapter 30: DHCP Snooping

- What is DHCP Snooping
- Lab-Practical

Chapter 31: Dynamic ARP Inspection

- What is ARP
- Lab-Practical

Chapter 32: Wireless Fundamentals

- WI-FI standards
- Wireless LAN
- Radio Frequency
- What is Wireless network security
- Authentication methods
- Encryption/Integrity methods
- WI-FI Protected Access (WPA)