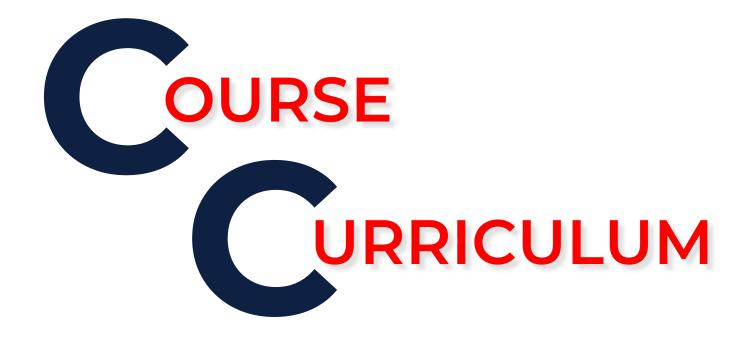


CCNA

Comprehensive Training Course







Module-1: Network Fundamentals

- Introduction to Computer Networks
- Types of Networks (LAN, MAN, WAN, WLAN, etc.)
- Networking Devices (Router, Switch, Hub, Access Point, etc.)
- Topologies (Star, Ring, Mesh, Bus, Hybrid)
- Network Cabling and Connectors (UTP, STP, Fiber Optics)
- Bandwidth, Latency, Throughput

Module-2: LAN / WAN

- LAN Configuration and Concepts
- WAN Technologies (Leased Line, MPLS, Metro Ethernet)
- Point-to-Point Protocol (PPP), HDLC
- WAN Encapsulation Types
- WAN Setup on Routers

Module-3: IP Addressing & Subnetting

- LAN Configuration and Concepts
- WAN Technologies (Leased Line, MPLS, Metro Ethernet)
- Point-to-Point Protocol (PPP), HDLC
- WAN Encapsulation Types
- WAN Setup on Routers

Module-4: OSI Model / TCP/IP Model

- 7 Layers of OSI Explained with Functions
- TCP/IP 4-Layer Model
- Encapsulation & De-encapsulation
- Comparison between OSI and TCP/IP Models

Module-5: Switching

- Switch Fundamentals and MAC Table
- Collision and Broadcast Domains
- Types of Switching (Store-and-forward, Cut-through)
- Troubleshooting Switch Issues

Module-6: VLAN (Virtual LAN)

- VLAN Creation and Configuration
- VLAN Trunking Protocol (VTP) Basics
- Inter-VLAN Routing
- Native VLANs, Voice VLANs

Module-7: STP / RSTP

- Purpose and Operation of STP (Spanning Tree Protocol)
- STP Port States (Blocking, Listening, Learning, Forwarding)
- RSTP (Rapid STP) Introduction and Benefits
- STP Root Bridge Election

Module-8: Routing

- Introduction to Routing
- Routing Table and Path Selection
- Differences: Static vs Dynamic Routing

Module-9: Static Routing / Default Route

- Configure and Verify Static Routes
- Default Routes and Use Cases
- Troubleshooting Static Routing

Module-10: Routing Protocols

- RIP: Versions, Timers, Metric (Hop Count), Configuration and Troubleshooting
- EIGRP / IGRP: Concepts, Metric Calculation, Configuration and Topology Table
- OSPF: Areas, LSAs, DR/BDR, Single & Multi-area
- BGP: External/Internal, Path Attributes, Route Advertisement

Module-11: HSRP / VRRP

- HSRP (Hot Standby Router Protocol)
- VRRP (Virtual Router Redundancy Protocol)
- Active/Standby Configuration

Module-12: ACL (Access Control List)

- Standard and Extended ACLs
- Inbound vs Outbound Filtering
- Named ACLs
- Wildcard Masks and ACL Placement

Module-13: NAT (Network Address Translation)

Static NAT

- Dynamic NAT
- PAT (Port Address Translation)
- NAT Configuration and Testing

Module-14: DHCP / DNS

- DHCP Operation (Discover, Offer, Request, Acknowledge)
- DHCP Configuration on Routers
- DNS Lookup Process
- Configuring DNS Forwarding

Module-15: ARP (Address Resolution Protocol)

- ARP Operation and Table
- ARP Cache Management
- Gratuitous ARP, Proxy ARP

Module-16: Cloud Technologies

- Basics of Cloud Computing (laaS, PaaS, SaaS)
- Cloud Service Providers Overview (AWS, Azure, GCP)
- Introduction to Networking in Cloud

Module-17: VPC (Virtual Private Cloud)

- VPC Concepts and Configuration (especially in AWS)
- Subnets, Route Tables, Internet Gateway
- Security Groups, NACLs

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COURSE BENEFITS



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