



TECHNOCATION FREELANCING TRAINING INSTITUTE & SOFTWARE HOUSE

Professional CCNA (Cisco Certified Network Associate) Course Outline

Module 1: Introduction to Networking

- Overview of Networking Concepts
 - Types of Networks (LAN, WAN, MAN, WLAN)
 - Networking Models: OSI & TCP/IP
 - Network Topologies & Architectures
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Module 2: Networking Fundamentals

- IP Addressing & Subnetting
 - IPv4 vs. IPv6 Addressing
 - MAC Address & ARP (Address Resolution Protocol)
 - Network Devices: Routers, Switches, Hubs, Firewalls
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Module 3: Cisco Networking Basics

- Introduction to Cisco Devices & IOS (Internetwork Operating System)
 - Cisco Command Line Interface (CLI) Basics
 - Setting Up a Cisco Router & Switch
 - Managing Configurations (Startup & Running Config)
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Module 4: Routing & Switching Essentials

- Static vs. Dynamic Routing
 - Configuring RIP, EIGRP, and OSPF Protocols
 - VLANs (Virtual LANs) & VLAN Trunking Protocol (VTP)
 - Spanning Tree Protocol (STP) & Redundancy
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Module 5: IP Connectivity & Routing Protocols

- Understanding IP Routing Concepts
 - Configuring & Troubleshooting OSPF in Single and Multi-Area
 - Border Gateway Protocol (BGP) Fundamentals
 - Router-on-a-Stick Inter-VLAN Routing
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Module 6: Network Security Fundamentals

- Common Cyber Threats & Network Attacks
 - Configuring Access Control Lists (ACLs)
 - Secure Router & Switch Configurations
 - Basics of VPN & IPsec
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Module 7: Wireless Networking (WLANs)

- Fundamentals of Wireless Technologies
 - Configuring & Securing Wireless Access Points
 - WLAN Security: WPA2, WPA3, SSID Hiding, MAC Filtering
 - Troubleshooting Wireless Networks
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Module 8: Network Automation & Programmability

- Introduction to Network Automation
 - Basics of Python for Networking
 - Using REST APIs & Cisco DNA Center
 - Software-Defined Networking (SDN) Concepts
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Final Module: CCNA Exam Preparation & Certification

- CCNA Exam Format & Question Types
- Hands-on Lab Scenarios & Packet Tracer Exercises
- Real-World Networking Projects
- Course Completion Certification & Exam Readiness