Cisco CCNA

Configure, route, secure and troubleshoot real Cisco networks, and walk into the CCNA 200-301 exam ready.

Duration: 1.5 months | Prepares for: Cisco CCNA 200-301 | Format: Online or onsite, 1-on-1 or batch | Target exam: 200-301 CCNA (v1.1 blueprint) | NUEXUS certificate on completion

OVERVIEW

This is a hands-on Cisco CCNA course built directly around the current 200-301 (v1.1) exam blueprint, taking you from how a packet moves across a wire to configuring routing, switching, wireless, security and basic network automation on real Cisco IOS. You spend most of your time in labs, building and breaking topologies in Cisco Packet Tracer and on IOS devices until the commands become second nature. Delivered mentor-led by certified trainers, it is designed for people who want a genuine, employable networking skill set, not just a paper credential. By the end you can stand up a small enterprise network, diagnose why it is broken and fix it, which is exactly what entry-level network roles ask for.

SKILLS YOU WILL GAIN

Network Fundamentals | IP Addressing & Subnetting | Network Access (VLANs & Trunking) | Spanning Tree | IP Connectivity & OSPF | Static & Inter-VLAN Routing | IP Services (NAT, DHCP, NTP) | Access Control Lists | Wireless Fundamentals | Security Fundamentals | Automation & Programmability

WHAT YOU WILL BE ABLE TO DO

- Explain and apply core networking concepts: the OSI and TCP/IP models, IPv4 and IPv6 addressing, subnetting and common protocols
- Configure and verify VLANs, trunking, inter-VLAN routing, EtherChannel and spanning tree on Cisco switches
- Set up IP connectivity with static routes, default routes and single-area OSPFv2, and configure first-hop redundancy with HSRP
- Configure essential IP services including DHCP, NAT, NTP, DNS, SNMP, syslog and QoS concepts
- Secure a network using port security, access control lists, AAA concepts, DHCP snooping, dynamic ARP inspection and WLAN security such as WPA2 and WPA3
- Read, interpret and troubleshoot device configurations and understand network automation basics including REST APIs, JSON, controller-based networking and tools like Ansible

WHO IT IS FOR

- Aspiring network engineers and administrators who want a recognised, job-focused networking foundation
- IT support, helpdesk and system admin staff looking to move into networking roles
- Computer science and IT students who want practical Cisco skills to complement their degree
- Cybersecurity learners who need solid networking fundamentals before specialising
- Career changers entering IT who want a structured, hands-on path into infrastructure

PREREQUISITES

- No formal networking certification required; beginner friendly and taught from first principles
- Basic computer literacy: comfortable using an operating system, files and a command line interface
- A laptop or PC able to run Cisco Packet Tracer for lab practice (we help you set this up)
- Willingness to put in regular lab and practice time between sessions

WHAT'S INCLUDED

- Mentor-led live sessions, online or onsite, in batch or 1-on-1
- Hands-on labs and real-world projects, not slides alone
- Recordings of your own sessions to revisit anytime
- Exam-aligned study material and practice questions
- Doubt-clearing and revision support through the program
- A verifiable NUEXUS completion certificate
- Career and next-step guidance after you finish

COURSE CURRICULUM

1 Network Fundamentals

- Role and function of network components: routers, Layer 2 and Layer 3 switches, next-generation firewalls, access points, controllers and endpoints
- Network topology architectures: two-tier, three-tier, spine-leaf, WAN, small office and cloud
- Physical interfaces, cabling types, and common Layer 1 issues (collisions, errors, duplex and speed mismatches)
- IPv4 addressing and subnetting, including private addressing and VLSM
- IPv6 addressing, prefixes and address types (global unicast, link-local, multicast, anycast)
- TCP versus UDP, and the difference between the OSI and TCP/IP models

2 Network Access: Switching and VLANs

- How switches build and use the MAC address table to forward frames
- Configuring and verifying VLANs spanning multiple switches (access ports)
- Configuring and verifying interswitch connectivity with 802.1Q trunk ports and native VLAN
- Layer 2 discovery protocols: Cisco Discovery Protocol (CDP) and LLDP
- Configuring and verifying EtherChannel (LACP) link aggregation
- Rapid PVST+ Spanning Tree Protocol: root bridge, port roles and PortFast

3 Wireless Networking Fundamentals

- Wireless principles: nonoverlapping Wi-Fi channels, SSIDs, RF and encryption basics
- Cisco wireless architecture and AP modes (autonomous versus controller-based)
- Physical infrastructure connections of WLAN components (AP, WLC, access and trunk ports)
- AP and WLC management access: Telnet, SSH, HTTP(S), console and TACACS+/RADIUS
- Configuring a wireless LAN for client connectivity using a GUI: WLAN creation, security settings, QoS profiles and advanced settings

4 IP Connectivity and Routing

- Interpreting the components of the routing table: routing protocol code, prefix, network mask, next hop, administrative distance and metric
- How a router makes forwarding decisions: longest match, administrative distance and routing metrics
- Configuring and verifying IPv4 and IPv6 static routing: network, host and default routes
- Configuring and verifying single-area OSPFv2: neighbor adjacencies, point-to-point, router ID and passive interfaces
- First-hop redundancy protocol purpose and operation using HSRP

5 IP Services

- Configuring and verifying inside source NAT using static and pools
- Configuring and verifying NTP operating in client and server mode
- Explaining the role of DHCP and DNS within the network
- Configuring network devices for remote access using SSH
- Describing the use of syslog features including facilities and severity levels
- Perceiving the function of SNMP, and per-hop behavior (PHB) for QoS such as classification, marking, queuing, congestion, policing and shaping

6 Security Fundamentals

- Key security concepts: threats, vulnerabilities, exploits and mitigation techniques
- Configuring device access control with local passwords, and security program elements (awareness, training, physical access)
- Configuring and verifying Layer 2 port security
- AAA concepts and the difference between authentication, authorization and accounting (RADIUS and TACACS+)
- Configuring and verifying access control lists (standard and extended, numbered and named)
- Layer 2 security features: DHCP snooping, dynamic ARP inspection, and wireless security protocols WPA, WPA2 and WPA3

7 Automation and Programmability

- How automation impacts network management and the difference between traditional and controller-based networking
- Controller-based, software-defined architectures (overlay, underlay and fabric) and separation of control and data plane
- Comparing traditional campus device management with Cisco DNA Center enabled device management
- Characteristics of REST-based APIs (CRUD, HTTP verbs and data encoding)
- Capabilities of configuration management mechanisms such as Ansible, and interpreting JSON encoded data

8 Labs, Troubleshooting and Exam Readiness

- Building end-to-end topologies in Cisco Packet Tracer combining switching, routing, wireless and security
- Structured troubleshooting methodology for connectivity, VLAN, routing and access-list issues
- Reading and correcting real device running-configurations
- Practising Cisco-style simulation (sim) and simlet questions under timed conditions
- Full-length practice questions mapped to each exam domain, with review of weak areas
- Command reference drills and a personal study plan toward your exam attempt

CAREER OUTCOMES

Network Engineer | Network Administrator | NOC Engineer | Systems Engineer | Technical Support Engineer

Entry	USD 45,000 to 65,000
Mid	USD 65,000 to 95,000
Senior	USD 95,000 to 120,000

Global averages from Glassdoor and PayScale, 2025. Actual pay varies by country, employer and experience.

CERTIFICATION PATH

NUEXUS training certificate

Issued by NUEXUS on course completion. Verifiable at nuexus.com/verify.

Cisco CCNA 200-301

Earned by passing the official exam. Issued and verified by the certification body itself, not by NUEXUS.

Exam	200-301 CCNA (v1.1 blueprint)
Questions	Cisco does not publish a fixed question count; expect multiple choice, drag-and-drop, and performance-based items
Format	Multiple choice, drag-and-drop, and hands-on performance items
Duration	120 minutes
Passing score	Cisco does not publish a fixed passing score; it is set by statistical analysis and can vary by exam
Delivery	Pearson VUE, at a test center or online proctored (English or Japanese)

The Cisco exam fee is paid separately to Cisco and quoted per engagement. The certification is valid for three years. Even when NUEXUS arranges your exam voucher, the resulting certification is issued and verified by the certification body directly.