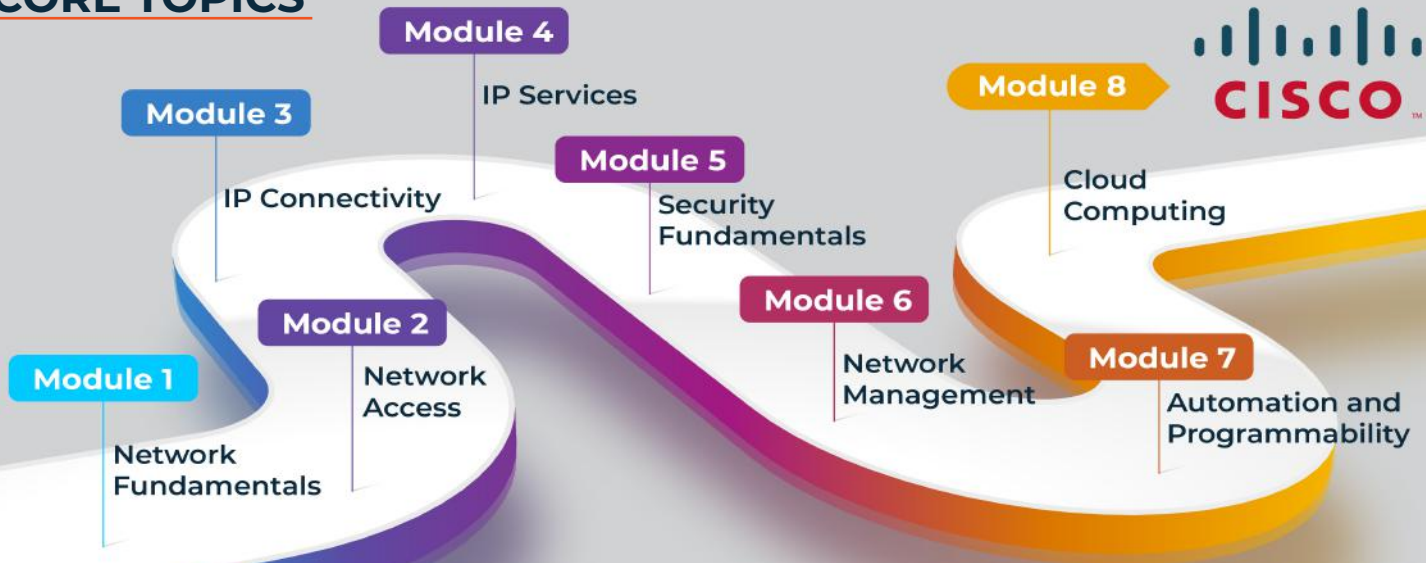# iTrainU TECHNOLOGIES

New CCNA Exam – 200-301

Cisco certification program will be drastically changed from Feb. 24, 2020. There will no longer be multiple different CCNA exams and certifications – only a single, comprehensive exam will be available. The new exam's code is 200-301 CCNA and its full name is Implementing and Administering Cisco Networking Technologies. According to Cisco, the new exam "covers a broad range of fundamentals based on the latest technologies, software development skills, and job roles".

CCNA 200 – 301 NEW SYLLABUS

CORE TOPICS

Module 1 – Network Fundamentals
Module 2 – Network Access
Module 3 – IP Connectivity
Module 4 – IP Services
Module 5 – Security Fundamentals
Module 6 – Network Management
Module 7 – Automation and Programmability
Module 8 – Cloud Computing

CISCO

Module 1: Network Fundamentals

1. Introduction to the OSI Model
2. Introduction to IPv4 (Internet Protocol)
3. IPv4 Packet Header
4. Address Resolution Protocol (ARP)
5. Introduction to TCP and UDP
6. TCP Header
7. TCP Window Size Scaling
8. Introduction to ICMP
9. Introduction to DNS
10. Introduction to Cisco Command Line Interface (CLI)
11. User mode and Privileged mode

Module 2: Network Access

2.2 VLANs and Trunks

1. Introduction to VLANs
2. How to configure VLANs
3. VLAN Trunking Protocol (VTP)
4. Introduction to 802.1Q
5. How to configure a Trunk
6. Dynamic Trunking Protocol (DTP)
7. 802.1Q Native VLAN
8. Introduction to Voice VLAN
9. Etherchannels
10. L3 Etherchannel

2.3 Spanning-Tree

1. Introduction to Spanning-Tree
2. Per VLAN Spanning-Tree
3. Spanning-Tree Port States
4. Spanning-Tree Cost Calculation
5. Spanning-Tree Portfast
6. Rapid PVST
7. Rapid PVST Configuration

2.4 Wireless

1. Introduction to Wireless Networks
2. Introduction to Wireless LANs
3. Wireless LAN 802.11 Service Sets
4. Introduction to Wireless Security
5. Wireless Authentication Methods
6. Wireless Encryption and Integrity
7. Wi-Fi Protected Access (WPA)
8. Cisco Wireless Network Architectures
9. Cisco WLC Deployment Models
10. Cisco Wireless AP Modes
11. Cisco Wireless LAN Controller (WLC) Basic Configuration
12. Cisco WLC WPA2 PSK Authentication

Module 3: IP Connectivity

3.1 Introduction

1. Introduction to Routers and Routing
2. Cisco IOS Router Basic Configuration 3. Introduction to Wide Area Networks (WAN)

3.2 IPv4 Subnetting

1. Introduction to Subnetting
2. Basics of Binary Numbers
3. Subnetting in Binary
4. Subnetting in Decimal (Fast Method)
5. Classless Inter-Domain Routing (CIDR)
6. Variable Length Subnet Mask (VLSM)
7. Route Summarization
8. Hexadecimal to Binary and Decimal Conversion
9. Create a Subnetting Cheat Sheet

3.3 IPv6

1. Introduction to IPv6
2. Shortening IPv6 Addresses
3. How to find IPv6 Prefix
4. IPv6 Address Types
5. IPv6 Address Assignment Example
6. IPv6 EUI-64
7. IPv6 Summarization
8. IPv6 Solicited Node Multicast Address
9. IPv6 Neighbor Discovery Protocol (NDP)
10. IPv6 Stateless Auto configuration

3.4 Routing

1. Default Gateway
2. Static Routing
3. IPv6 Static Route
4. IP Routing Explained
5. Router on a Stick
6. Inter VLAN Routing
7. Administrative Distance
8. Floating Static Route
9. Introduction to Route Summarization

3.5 OSPF (OPEN SHORTEST PATH FIRST)

1. Introduction to OSPF
2. OSPF Configuration
3. OSPF Packets and Neighbor Discovery
4. OSPF Reference Bandwidth
5. OSPF Router ID
6. OSPF DR/BDR Election
7. OSPF Passive Interface
8. OSPF Hello and Dead Interval

3.6 Gateway Redundancy

1. Introduction to Gateway Redundancy

Module 4: IP Services

4.1 DHCP (Dynamic Host Configuration Protocol)

1. Introduction to DHCP
2. DHCP Server Configuration
3. DHCP Relay Agent
4. DHCP Client
5. DHCP Server IPv6 Configuration

4.2 SNMP (Simple Network Management Protocol)

1. Introduction to SNMP
2. SNMPv2
3. SNMPv3

4.3 NAT (Network Address Translation)

1. Introduction to NAT and PAT
2. NAT Static
3. NAT Dynamic
4. Port Address Translation (PAT)

4.4 (QoS) Quality of Servicet

1. Introduction to Quality of Service (QoS)
2. IP Precedence and DSCP Values
3. Classification
4. Marking
5. Shaping
6. Policing

Module 5: Security Fundamentals

5.1 Access-Lists

1. Introduction to Access-Lists
2. Wildcard Bits
3. Standard Access-List
4. Extended Access-List
5. Time-based Access-List

5.2 Security Analysis

1. Port-Security
2. AAA and 802.1X
3. AAA User Authentication
4. AAA Admin Authentication
5. DHCP Snooping
6. Introduction to Firewalls
7. Introduction to VPNs

Module 6: Network Management

1. Introduction to CDP
2. Introduction to LLDP
3. Telnet Server and Client
4. SSH Server and Client
5. Introduction to NTP
6. Introduction to Syslog
7. Configuration Register
8. Password Recovery on Cisco IOS
9. Cisco IOS File System
10. Upgrade Cisco IOS Image

Module 7: Automation and Programmability

1. Device Programmability
2. REST API
3. Data Models and Structures
4. Configuration Management Tools and Version Control Systems
5. Introduction to Software Defined Networking (SDN)
6. Spine and Leaf Architecture

Module 8: Cloud Computing

1. Virtual Machines and Containers
2. Introduction to Cloud Computing
3. Cloud Connectivity