Introduction to Networks

Course Description:

This first course in the 3-course CCNA series introduces architectures, models, protocols, and networking elements functions needed to support the operations and priorities of companies to small innovative retailers. You'll even get the chance to build simple local area networks (LANs) yourself. You'll have a working knowledge of IP addressing schemes foundational network security, and be able to perform basic configurations for routers and switches.

Prerequisites: No prerequisites required.

Course Index:

-Networking Today
- Basic Switch and End Device Configuration
- Protocols and Models
- Physical Layer
- Number Systems
- Data Link Layer
- Ethernet Switching
- Network Layer
- Address Resolution
- Basic Router Configuration
- IPv4 Addressing
- IPv6 Addressing
- ICMP
- Transport Layer
- Application Layer
- Network Security Fundamentals
- Build a Small Network

By the end of this course, student will be able to build local area networks (LANs), configure basic settings on routers and switches, and implement internet protocol (IP).

Switching, Routing, and Wireless Essentials

Course Description:

Dive further into the world of networking with the second CCNA course in a 3-course series. This course focuses on switching technologies and router operations that support small-to-medium business networks, including wireless local area networks (WLAN) and security concepts. Students perform basic network configuration and troubleshooting, identify and mitigate LAN security threats, and configure and secure a basic WLAN.

Prerequisites: CCNAv7 Introduction to Networks or having equivalent knowledge.

Course Index:

- **Basic Device Configuration**
- **Switching Concepts**
- **VLANs**
- **Inter-VLAN Routing**
- **STP Concepts**
- **EtherChannel**
- **DHCPv4**
- **SLAAC and DHCPv6**
- **FHRP Concepts**
- **LAN Security Concepts**
- **Switch Security Configuration**
- **WLAN Concepts**
- **WLAN Configuration**
- **Routing Concepts**
- **IP Static Routing**
- **Troubleshoot Static and Default Routes**

By the end of this course you will be able to configure advanced functionality in routers and switches. You will also be able to perform basic troubleshooting of these components. Using security best practices, you will troubleshoot and resolve common protocol issues in both IPv4 and IPv6 networks.

Enterprise Networking, Security, and Automation

Course Description:

Large enterprises depend heavily on the smooth operation of their network infrastructures. This third course in the 3-course CCNA series describes the architectures and considerations related to designing, securing, operating, and troubleshooting enterprise networks. It covers wide area network (WAN) technologies and quality of service (QoS) mechanisms used for secure remote access along with the introduction of software-defined networking, virtualization, and automation concepts that support the digitalization of networks.

Prerequisites – CCNAv7: Switching, Routing, and Wireless Essentials or possessing equivalent knowledge.

Course Index:

- **Single-Area OSPFv2 Concepts**
- **Single-Area OSPFv2 Configuration**
- **Network Security Concepts**
- **ACL Concepts**
- **ACLs for IPv4 Configuration**
- **NAT for IPv4**
- **WAN Concepts**
- **VPN and IPsec Concepts**
- **QoS Concepts**
- **Network Management**
- **Network Design**
- **Network Troubleshooting**
- **Network Virtualization**
- **Network Automation**

By the end of this course students will be able to configure, troubleshoot, and secure enterprise network devices. You will be versed in application programming interfaces (APIs) and the configuration management tools that make network automation possible.