

## Week 1

### Simple Network Design

- Exploring the Functions of Networking
- Exploring Network Devices
  - Routers
  - Switches

### Establishing Connectivity

- Understanding the Host-to-Host Communications Model
- Understanding the TCP/IP Internet Layer

### Introduction to Cisco IOS

- Operating Cisco IOS Software
- Implementing Device Management
- Managing Cisco Devices

### Basic Network Configuration

- Configure IP Connectivity
- Verify Basic Connectivity

## Week 2

### Addresses in a Network

- Introduction to Layer 2 Addresses
- Introduction to IPv4 Addressing and IP Subnets
- Introduction to IPv6 Addresses

### Network Address Assignments

- Implementing DHCP
- Implementing DHCP for IPv6
- Manual Configuration

### Implementing Network Device Security

- Learning Basics of ACL
- Securing Administrative Access
- Implementing Device Hardening
- Implementing Advance Security

### Week 3

Basic Network and Routing Concepts

- Differentiating Routing Protocols
- Understanding Network Technologies
- Configuring Static Routes

Dynamic Routing Protocols

- Introduction to RIP
- Introduction to OSPF
- Introduction to EIGRP
- Introduction to IS-IS
- Introduction to BGP

Routing Information Protocol (RIP)

- Configuring RIPv2
- Configuring RIPNG
- Securing RIP
- Troubleshooting and Verifying RIP

### Week 4

EIGRP Implementation

- Establishing EIGRP Neighbor Relationships
- Building the EIGRP Topology Table
- Optimizing EIGRP Behavior
- Configuring EIGRP for IPv6
- Discovering Named EIGRP Configuration
- Securing EIGRP

## Week 5

### OSPF Implementation

- Establishing OSPF Neighbor Relationship
- Building the Link State Database
- Optimizing OSPF Behavior
- Configuring OSPFv3
- Securing OSPF

## Week 6

### Configuration of Redistribution

- Implementing Basic Routing Protocol Redistribution
  - Manipulating Redistribution Using Route Filtering
- ### Path Control Implementation
- Using Cisco Express Forwarding Switching
  - Implementing Path Control

### Enterprise Internet Connectivity

- Planning Enterprise Internet Connectivity
- Implementing Basic BGP Operations
- Using BGP Attributes and Path Selection Process
- Controlling BGP Routing Updates
- Implementing BGP for IPv6 Internet Connectivity

## Week 7

### Basic SWITCH Concepts and Network Design

- Analyzing Campus Network Structure
- Comparing Layer 2 and Multilayer Switches
- Using Cisco SDM Templates
- Implementing LLDP
- Implementing PoE

### Campus Network Architecture

- Implementing VLANs and Trunks

- Introducing VTP
- Configuring Layer 2 Port Aggregation

### Week 8

#### Spanning Tree Implementation

- Implementing RSTP
- Implementing STP Stability Mechanisms
- Implementing Multiple Spanning Tree Protocol

### Week 9

#### Configuring Inter-VLAN Routing

- Implementing Inter-VLAN Routing Using a Router
  - Configuring a Switch to Route
- #### Implementing High Availability Networks
- Configuring Network Time Protocol
  - Implementing SNMP Version 3
  - Implementing IP SLA
  - Implementing Port Mirroring for Monitoring Support
  - Verifying Switch Virtualization

### Week 10

#### First Hop Redundancy Implementation

- Configuring Layer 3 Redundancy with HSRP
- Configuring Layer 3 Redundancy with VRRP
- Configure VRRP With Load Balancing
- Configuring Layer 3 Redundancy with GLBP
- Configuring First Hop Redundancy for IPv6

#### Campus Network Security

- Implementing Port Security
- Implementing Storm Control
- Implementing Access to External Authentication

- Mitigating Spoofing Attacks
- Securing VLAN Trunks
- Configuring Private VLANs

Review Zero to Hero Topics