# CCNA course contents:

**Prerequisites:**

The knowledge and skills that you must have before attending this course are as follows:

1. Basic computer literacy
2. Windows navigation skills
3. Basic Internet usage skills
4. Fundamental understanding of data networking and IP addressing
5. Familiarity with the Cisco IOS command-line interface

# Why one should Learn CCNA?

This Course is intended for the following audience:

1. Network Administrator

2. Network Engineer

3. Network Manager

4. Systems Engineer

The secondary audience for this course is as follows:

1. Network Designer
2. Project Manager

# Course Objectives:

1. Describes  how networks function , identifying major components, function of network components and the open system Interconnection (OSI) reference model
2. Using  the host-to-host packet delivery process, describe issues related to increasing traffic on an Ethernet LAN and identify switched LAN technology solution to Ethernet networking issues
3. Describes the reason for extending the reach of a LAN and the methods that can be used with a focus on RF wireless access

4.  Describes the reasons for connecting networks with routers and how routed networks transmit data through networks using TCP/IP
5.  Describe the function of Wide Area Networks (WANs). The major devices of WANs, and configure PPP encapsulation, static and dynamic routing, PAT and RIP routing
6.  Use the command-line-interface to discover neighbors on the network and managing the router's startup and configuration
7.  Expand a small-sized, switched LAN to a medium-sized LAN with multiple switches, supporting VLANs, trunking  and spanning tree
8.  Describe routing concepts as they apply  to a medium-sized network and discuss considerations when implementing routing on the network
9.  Configure, verify, and troubleshoot OSPE
10. Configure, verify, and troubleshoot EIGRP
11. Determine how to apply ACLs based on network requirements, and configure, verify, and troubleshoot ACLs on a medium-sized network
12. Describe when to use and configure NAT or PAT  on a medium-size network and explain and configure IPv6 addressing on a Cisco router
13. Identify and implement the appropriate WAN technology based on network requirements

## CCNA

**Course Outline:**

**Building a Simple Network**
1.  Lesson 1: Exploring the Functions of Networking
2.  Lesson 2: Securing the Network
3.  Lesson 3: Understanding the Host-to-Host Communication Model
4.  Lesson 4: Understanding TCP/IP's Internet Layer
5.  Lesson 5: Understanding TCP/IP's Transport Layer
6.  Lesson 6: Exploring the Packet Delivery Process
7.  Lesson7: Understanding Ethernet LAN

**Ethernet Local Area Networks**

1.  Lesson 1: Understanding the Challenges of Shared LANs
2.  Lesson 2:  Solving Network Challenges with Switched LAN Technology
3.  Lesson 3:  Exploring the Packet Delivery Process
4.  Lesson 4: Operating Cisco IOS Software
5.  Lesson 5: Starting a switch
6.  Lesson 6: Understanding Switch Security
7.  Lesson 7: Maximizing the Benefits of Switching

8. Lesson 8: Troubleshooting Switch Issue

**Wireless Local Area Networks**

1. Lesson 1: Exploring Wireless Networking
2. Lesson 2: Understanding WLAN Security
3. Lesson 3: Implementing a WLAN

**Exploring the Functions of Routing**

1. Lesson 1: Exploring the Functions of Routing
2. Lesson 2: Understanding Binary Basics
3. Lesson3: Constructing a Network Addressing Scheme
4. Lesson 4: Starting a Router
5. Lesson 5: Configuring a Router
6. Lesson 6: Exploring the Packet Delivery Process
7. Lesson 7: Understanding Router Security
8. Lesson 8: Using Cisco Router and Security Device Manager
9. Lesson 9: Using a Router as a DHCP Server
10. Lesson 10: Accessing Remote Devices

**Wide Area Networks**

1. Lesson 1: Understanding WAN Technologies
2. Lesson 2: Enabling the Internet Connection
3. Lesson 3: Enabling Static Routing
4. Lesson 4: Configuring Serial Encapsulation
5. Lesson 5: Enabling Routing Information Protocol (RIP)

**Network Environment Management**

1. Lesson 1: Discovering Neighbors on the Network
2. Lesson 2: Managing Router Startup and Configuration
3. Lesson 3: Managing Cisco Devices

**Medium-Sized Switched Network Construction**

1. 1. Lesson: Implementing VLANs and Trunks
2. 2. Lesson 2: Improving Performance with Spanning Tree
3. 3. Lesson 3: Routing Between VLANs
4. 4. Lesson 4: Securing the Expanded Network
5. 5. Lesson 5: Troubleshooting Switched Networks

## Medium-Sizes Routed Network Construction

1. Lesson 1: Implementing VLSM
2. Lesson 2: Reviewing Routing Operations

## Single Area OSPF Implementation

1. Lesson 1: Implementing OSPF
2. Lesson 2: Troubleshooting OSPF

## EIGRP Implementation

1. Lesson 1: Introducing ACL Operation
2. Lesson 2: Configuring and Troubleshooting ACLs

## Access Control Lists

1. Lesson 1: Introducing ACL Operation
2. Lesson 2: Configuring and Troubleshooting ACLs

## Address Space Management

1. Lesson 1: Scaling the Network with NAT and PAT
2. Lesson 2: Transitioning to IPv6

**LAN Extension into a WAN**

1. Lesson 1: Introducing VPN Solutions
2. Lesson 2: Establishing a point-to-point WAN Connection with  ppp
3. Lesson 3: Establishing a WAN Connection with Frame Relay
4. Lesson 4: Troubleshooting Frame Relay WANs