

Designing For Cisco Internetwork Solutions - On Demand (DESGN 3.0)

Modality: On Demand

Duration: 40 Hours

CLC: 8 Units

This course prepares you for the 200-310 DESGN Exam leading to 200-310 DESGN Certification. This course does not include the **Official Exam Voucher**, however, you can request to purchase the Official Exam Voucher separately.

About this course:

This course focuses on the foundational skills and knowledge necessary for professionals entering the specialization of network design or working as an apprentice to a more experienced network design engineer. Topics include design of routed and switched network infrastructures and services involving LAN, WAN, and broadband access for businesses and organizations, including service virtualization. The Enterprise Composite Model used in the course facilitates the design, planning, implementation, operation and optimization (PDIOO) through modular design and focus on the relations between modules. This course also helps the students in the preparation for [Cisco: 200-310 DESGN exam](#).

The average salary for Cisco Certified Network Engineer is **\$77,484** per year.

Course Objectives:

- How to identify designed requirements and characterize (baseline) the existing network
- Principles of network design and the guidelines for building a network design solution
- How the Enterprise Composite Network model simplifies the complexity of today's networks
- Design an Enterprise Campus in a hierarchical modular fashion using Cisco Borderless Networks and modular design
- Design Enterprise Campus and Enterprise Edge networks
- Select the appropriate Network Management Solution
- Design the WAN and branch office
- Design a network addressing plan for IPv4 and IPv6
- Select optimal routing protocols for the network
- Design a modern data center using Cisco and industry best practices
- Evaluate security solutions for the network
- Design Voice, Video, and Collaboration solutions
- Design a wireless solution using lightweight access points and the Cisco Wireless LAN Controller
- Understand the role of software defined networks in a design
- All topics on the CCDA certification exam
- Test-taking tips and techniques

Audience:

- Network engineers and architects
- Systems administrators and network designers
- Anyone who wants CCDA certification
- IT managers wanting greater skill in network design

Prerequisites:

- CCNA certification is highly recommended
- Familiarity with basic internetworking technologies such as LAN, WAN, bridging, switching, protocols, and network management
- SWITCH - Implementing Cisco IP Switched Networks v2.0
- ROUTE - Implementing Cisco IP Routing v2.0

Course Outline:

Module 1: Design Methodologies

- Lesson 1: Design Life Cycle
- Lesson 2: Characterizing Existing Network
- Lesson 3: Top-Down Approach
- Lesson 4: Module Summary
- Lesson 5: Module Self-Check

Module 2: Network Design Objectives

- Lesson 1: Building a Modular Network
- Lesson 2: Applying Modularity: Hierarchy in a Network
- Lesson 3: Applying Modularity: Virtualization Overview
- Lesson 4: Module Summary
- Lesson 5: Module Self-Check

Module 3: Campus Network Design

- Lesson 1: Layer 2/Layer 3 Demarcation
- Lesson 2: Layer 2 Design Considerations
- Lesson 3: High Availability Considerations
- Lesson 4: Layer 3 Design Considerations
- Lesson 5: Traffic and Interconnections
- Lesson 6: Module Summary
- Lesson 7: Module Self-Check

Module 4: Enterprise Network Design

- Lesson 1: Designing a Secure Network
- Lesson 2: Edge Connectivity Design
- Lesson 3: WAN Design
- Lesson 4: Branch Design

- Lesson 5: Connecting to the Data Center
- Lesson 6: Module Summary
- Lesson 7: Module Self-Check

Module 5: Design of Internal Routing and Connecting to the Internet

- Lesson 1: Routing Protocol Considerations
- Lesson 2: Expanding EIGRP Design
- Lesson 3: Expanding OSPF Design
- Lesson 4: Introducing IS-IS
- Lesson 5: Expanding IS-IS Design
- Lesson 6: Using BGP to Connect to the Internet
- Lesson 7: Module Summary
- Lesson 8: Module Self-Check

Module 6: Expanding the Existing Network

- Lesson 1: Understanding Quality of Service
- Lesson 2: Supporting Wireless Access
- Lesson 3: Integrating Collaboration
- Lesson 4: Module Summary
- Lesson 5: Module Self-Check

Module 7: IP Addressing Design

- Lesson 1: Concepts of Good IP Addressing
- Lesson 2: Creating an Addressing Plan for IPv4
- Lesson 3: IPv6 Addressing
- Lesson 4: Supporting IP Addressing
- Lesson 5: Module Summary
- Lesson 6: Module Self-Check

Module 8: Introduction to Software Defined Networks

- Lesson 1: SDN Overview
- Lesson 2: Module Self-Check

Labs:

Challenge 1: Ask the Right Questions

Challenge 2: Design Branch's LAN

Challenge 3: Design Branch's Connections to the HQ

Challenge 4: Design Branch's Routing

Challenge 5: Design Support for Wireless and Collaboration

Challenge 6: Design IPv4 Addressing Plan

Challenge 7: Design IPv6 Addressing Plan