



Course Outline

2026-2027 Catalog

CSCI 41 - Cisco II

Catalog Description

Transfer Status: CSU

Prerequisite: CSCI 40

Unit(s): 3.00

Lecture: 34.00 Contact hours/68.00 Out of class hours/102.00 Total hours/2.00 Unit(s)

Lab: 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)

Total: 85.00 Contact hours/68.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

Course Description: The second course in the globally recognized Cisco Certified Networking Associate (CCNA) curriculum focuses on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLAN) and security concepts. Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate LAN security threats, and configure and secure a basic WLAN. (C-ID ITIS 151).

Objectives

Upon successful completion of this course, the student should be able to:

1. Configure VLANs and Inter-VLAN routing applying security best practices.
2. Troubleshoot inter-VLAN routing on Layer 3 devices.
3. Configure redundancy on a switched network using STP and EtherChannel.
4. Troubleshoot EtherChannel on switched networks.
5. Explain how to support available and reliable networks using dynamic addressing and first-hop redundancy protocols.
6. Configure dynamic address allocation in Internet Protocol version 6 (IPv6) networks.
7. Configure WLANs using a Wireless Controller (WLC) and Layer 2 (L2) security best practices.
8. Configure switch security to mitigate LAN attacks.
9. Configure IPv4 and IPv6 static routing on routers.

Course Content

Topic Titles / Suggested Time Topic

Lecture

<u>Topics</u>	<u>Lec Hrs</u>
Basic Device Configuration	1.50
Switching Concepts	1.50
VLANs	3.00
Inter-VLAN Routing	2.00
STP	2.00
EtherChannel	2.00
DHCPv4	3.00
SLAAC and DHCPv6 Concepts	2.00
FHRP Concepts	2.00
LAN Security Concepts	2.00
Switch Security Configuration	2.00
WLAN Concepts	3.00
WLAN Configuration	2.00
Routing Concepts	2.00
IP Static Routing	2.00
Troubleshoot Static and Default Routes	2.00

Total Hours: 34.00

Lab

<u>Topics</u>	<u>Lab Hrs</u>
Basic Device Configuration	2.00
Switching Concepts	2.00
VLANs	4.50
Inter-VLAN Routing	3.00

Topics	Lab Hrs
STP	3.00
EtherChannel	4.00
DHCPv4	4.00
SLAAC and DHCPv6 Concepts	3.00
FHRP Concepts	2.50
LAN Security Concepts	3.50
Switch Security Configuration	4.00
WLAN Concepts	4.00
WLAN Configuration	3.00
Routing Concepts	3.00
IP Static Routing	2.50
Troubleshoot Static and Default Routes	3.00
Total Hours: 51.00	

Methods of Instruction

- A. Demonstrations
- B. Discussion
- C. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- D. Lecture
- E. Problem-Solving Sessions
- F. Reading Assignments

Methods of Evaluation

- A. Exams/Tests
- B. Projects
- C. Homework
- D. Lab Projects
- E. Written Examinations
- F. Performance Examinations

Examples of Assignments

Reading Assignments

1. Read the white paper provided on MPLS, enumerate the benefits and be prepared to discuss it in class.
2. Read the article VLAN vs Subnet: What Are Their Differences? Be prepared to discuss your findings in class.

Writing Assignments

1. Write a 1-2 page paper on Network Security Best practices, how has our evolving infrastructure changed network security?
2. Research available WAN connectivity and services. Write a 1-2 page paper comparing and contrasting services and costs.

Out-of-Class Assignments

1. Using Packet Tracer, create a WAN with four routers, six switches, and ten workstations. Verify connectivity by pinging from one end to the other.
2. Research available Wireless connectivity and services. Write a 1-2 page paper comparing and contrasting services and costs.

Recommended Materials of Instruction

Other Learning Materials

Required online access to Cisco Networking Academy

Minimum Qualifications

Computer Information Systems
Computer Science (Masters Required)
Computer Service Technology

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