Course Description:

CIS-018B - Cisco Router and IOS Software Units: 3

This course covers the fundamentals of wide area networks (WANs) and prepares students for the Cisco Certified Network Associate (CCNA) certification test. It includes topics such as Cisco router configurations, the differences between routed and routing protocols, routing tables, and network packet transsmssion methodology. It also includes configuration of IP addresses and techniques to reduce routing problems.

Lecture Hours: 2.5 Lab Hours: 1.5 Repeatable: No Grading: O

Prerequisite: CIS 018A

Corequisite: CONCURRENT ENROLLMENT IN CIS 200

CAN: None

Advisory Level: Read: 2 Write: 2 Math:

Transfer Status: CSU Degree Applicable: AA/AS

CSU GE: None District GE: None IGETC: None

Learning Outcomes:

1. Disassemble and reassemble the parts of a router.
2. Describe connectionless and connection-oriented network services and compare and contrast their key differences.
3. Evaluate the effectiveness of each flow control method used in networking.
4. Given the functions of the TCP/IP transport-layer protocols, analyze where data transmission errors might occur.
5. Create an appropriate configuration file for different types of networks, e.g., STAR, BUS, and FDDI.
6. Configure a router for privileged exec mode.
7. Identify the functions performed by ICMP.
8. Assign router passwords, identifications, and banners.
9. Analyze the main Cisco IOS software commands for router startup.
10. Create an initial network configuration using the setup command.
11. Log in to a router in both user and privileged modes and interpret the privileges assigned to each type of user.
12. Use the context-sensitive help facility.
13. Analyze the command history file using the editing features.
14. Load Cisco IOS software from flash memory, a TFTP server, or ROM.
15. Backup, upgrade, and load a backup of the Cisco IOS software image.
16. Identify the parts in specific protocol address examples and assign logical addresses in a WAN.
17. Evaluate the advantages and disadvantages of using various techniques to solve routing typology changes.
18. Configure and verify IP addresses using selected and extended access lists.
19. Prepare the initial router configuration and enable IP addressing using various filters.
20. Analyze any problems that occur after adding the RIP and IGRP routing protocols to a router configuration.
21. Configure standard access lists to control IP traffic.
22. Monitor and verify selected access list operations on the router.