

Inver Hills Community College

ITC 2520: Switching, Routing, and Wireless Essentials (CCNA 2)

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 2

OJT Hours/Week: *.*

Prerequisites:

ITC 2510 - Introduction to Networks (CCNA1) (Minimum grade: 2.0 GPA equivalent)

Corequisites: None

MnTC Goals: None

Prepares students to understand and implement basic enterprise routing, switching, and wireless technologies. Layer 2 technologies include: VLANs, Spanning-Tree, EtherChannel, and Wireless LANs. Layer 3 technologies include: DHCP, SLAAC, routing, static IP routes, and redundancy protocols. By the end of this course students will be able to configure and troubleshoot enterprise routers, switches, and wireless access points in a basic configuration. Switching, Routing, and Wireless Essentials is the second in a sequence of three courses focusing on preparation for the Cisco Certified Network Associate (CCNA) certification.

B. COURSE EFFECTIVE DATES: 08/26/2013 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Basic Device Configuration, Switching Concepts, LAN Security Concepts & Configuration 25%
VLANs, Inter-VLAN Routing, STP, and EtherChannel 25%
DHCPv4, SLAAC, and DHCPv6 13%
Routing Concepts, Static IP Routing, FHRPs, Troubleshooting Routes 25%
WLAN Concepts and Configuration 12%

D. LEARNING OUTCOMES (General)

1. The student will be able to:
 - Configure devices by using security best practices.
 - Explain how Layer 2 switches forward data.
 - Implement VLANs and trunking in a switched network.
 - Troubleshoot inter-VLAN routing on Layer 3 devices.
 - Explain how STP enables redundancy in a Layer 2 network.
 - Troubleshoot EtherChannel on switched links.
 - Implement DHCPv4 to operate across multiple LANs.
 - Explain the operation of dynamic address allocation in IPv6 networks.
 - Explain how FHRPs provide default gateway services in a redundant network.
 - Explain how vulnerabilities compromise LAN security.
2.
 - Configure switch security to mitigate LAN attacks.
 - Explain how WLANs enable network connectivity.
 - Implement a WLAN using a wireless router and WLC.
 - Explain how routers use information in packets to make forwarding decisions.
 - Configure IPv4 and IPv6 floating static routes.
 - Explain how to troubleshoot static and default route configurations.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted