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Course Outline for CNT 65

CISCO CCNP SEMESTER 7 MULTILAYER SWITCHING

Effective: Fall

I. CATALOG DESCRIPTION:
CNT 65 — CISCO CCNP SEMESTER 7 MULTILAYER SWITCHING — 4.00 units

This is one of the four courses in the Certified Cisco Network Professional (CCNP) curriculum. This course is designed to provide students a combination of both lectures and laboratory experience in current and emerging networking technology. This will prepare them for the Cisco Certified Networking Professional (CCNP) exam: Building Cisco Multilayer Switching Networks. Instruction includes both routing and switching concepts, covering both Layer 2 and Layer 3 technologies. This course includes topics in LAN design, media types, VLANs, VLAN Trunking Protocol, ISL, 802.1Q, Spanning Tree, Inter-VLAN routing, Mulitlayer Switching, Flow Masks, HSRP, Multicasting, IGMP, and CGMP. Recommend students take courses in order and only one CCNP course at a time.

3.00 Units Lecture 1.00 Units Lab

Prerequisite
CNT 62B - Cisco Networking Academy CCNA II
with a minimum grade of C
or

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Grading Methods:
Letter or P/NP

Discipline:

	MIN
Lecture Hours:	54.00
Lab Hours:	54.00
Total Hours:	108.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 2

III. PREREQUISITE AND/OR ADVISORY SKILLS:
Before entering the course a student should be able to:

A. CNT62B

IV. MEASURABLE OBJECTIVES:
Upon completion of this course, the student should be able to:

A. build a campus network
B. define common workgroups
C. manage redundant links
D. perform InterVLAN routing
E. manage network traffic
F. configure HSRP for a fault-tolerant routing
G. configure IP multicast
H. control access to the campus

V. CONTENT:
A. Overview of the Campus Network and Design Model
    1. Over view of a campus network
    2. Key characteristics of various switching technologies
    3. LAN switching and hierarchical model of network design
    4. Building-block approach
B. LAN Media
    1. Legacy media types
    2. Fast Ethernet
    3. Gigabit Ethernet
    4. Determining bandwidth needs

C. Configuring the switch
    1. initial connectivity to the switch
    2. Basic configuration of the switch
    3. Important IOS features
D. Introduction to V-LANS
    1. V-LAN basics
    2. V-LAN types
    3. Configuring V-LANS
    4. V-LAN identification
    5. Trunking
    6. V-LAN trunking protocol (VTP)
    7. VTP configuration
    8. VTP pruning
E. Spanning tree protocol (STP) and redundant links
    1. Basic STP operations
    2. STP processes
    3. V-LANS and STP
    4. STP in the campus network
    5. Redundant links
F. Routing between V-LANS
    1. V-LAN issues
    2. Route switch modules
    3. External routers
G. Multilayer switching
    1. MLS processes
    2. Basic MLS configuration
    3. Flow mask
    4. MLS on the switch
H. Hot standby routing protocol (HSRP)
    1. HSRP overview
    2. HSRP configuration
I. Multicasting
    1. Multicasting overview
    2. IGMP
    3. Routing multicast traffic
    4. Multicast routing protocols
    5. Configure IP multicast routing
    6. Optional IP multicast task
J. Restricting network access
    1. Policy overview
    2. Basic security
    3. Policy configuration

VI. METHODS OF INSTRUCTION:
A. **Lecture** -
B. **Lab** -
C. **Discussion** -
D. **Demonstration** -

VII. TYPICAL ASSIGNMENTS:
A. Reading: 1. Read on-line curriculum chapter 3. Discuss switch configuration options B. Demonstration: 1. Configure switch.

VIII. EVALUATION:
A. **Methods**

B. **Frequency**

IX. TYPICAL TEXTS:
1. - *CCNP Cisco Networking Academy Program: Semester Seven Companion Guide*., Cisco Press, 2000.
2. Cisco Academy on-line curriculum.

X. OTHER MATERIALS REQUIRED OF STUDENTS: