

CUMBERLAND COUNTY COLLEGE

Course: CS 234 Scaling Networks

Credits: 4

Prerequisites: CS 233

Description:

This course describes the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement a WLAN in a small-to-medium network.

Learning Outcomes

At the completion of this course, students will be able to:

- Demonstrate understanding of, and configure and troubleshoot enhanced switching technologies such as VLANs, Rapid Spanning Tree Protocol (RSTP), Per VLAN Spanning Tree Plus Protocol (PVST+), and EtherChannel.
- Demonstrate understanding of, and configure and troubleshoot first hop redundancy protocols (HSRP) in a switched network.
- Demonstrate understanding of, and configure and troubleshoot wireless routers and wireless clients.
- Configure and troubleshoot routers in a complex routed IPv4 or IPv6 network using single-area OSPF, multiarea OSPF, and Enhanced Interior Gateway Routing Protocol (EIGRP).

Topical Outline

- Introduction to Scaling Networks
- LAN Redundancy
- Link Aggregation
- Wireless LANs
- Adjust and Troubleshoot Single-Area OSPF
- Multiarea OSPF
- EIGRP
- EIGRP Advanced Configurations and Troubleshooting
- IOS Images and Licensing

Text:

REQUIRED MATERIALS – Packet Tracer v5.3, available for download from the Cisco Netacad site. LAN Switching and Wireless, CCNA Exploration Labs and Study Guide – Cisco Press – ISBN – 1-58713-202-8 – All other instruction and testing is delivered over the Internet from the Cisco web site – access information – cisco.netacad.net

OPTIONAL MATERIALS – LAN Switching and Wireless, CCNA Exploration Companion Guide – Cisco Press – ISBN – 1-58713-207-9.

Student Assessment

(Assessment may be accomplished through projects, portfolios, exams, labs, presentations and/or papers)

Academic Integrity

Plagiarism is cheating. Plagiarism is presenting in written work, in public speaking, and in oral reports the ideas or exact words of someone else without proper documentation.

Whether the act of plagiarism is deliberate or accidental [ignorance of the proper rules for handling material is no excuse], plagiarism is, indeed, a “criminal” offense.

As such, a plagiarized paper or report automatically receives a grade of **ZERO** and the student may receive a grade of **F** for the semester at the discretion of the instructor.

Tutoring & Project Assist

If you are having difficulty with work in this class tutoring is available through the Center for Academic & Student Success. If you think that you might have a learning disability, contact Project Assist at 856.691.8600 x 1282 for information on assistance that can be provided to eligible students.

Before Withdrawing From This Course

If a student experiences adverse circumstances while enrolled in this course and considers withdrawing, s/he should see an advisor (division or advisement center) **BEFORE** withdrawing from the class. A withdrawal may cause harmful repercussions to completion rate standards and overall GPA which can limit or eliminate future financial aid in addition to causing academic suspension.