

WAYNE COMMUNITY COLLEGE
NET225, Switching Basics and Intermediate Routing
(Semester)
(Date, Time, and Location)

Instructor Information

Instructor:
Office Location:
Telephone Numbers:
Office Hours:
E-Mail Address:

Course Description

This course introduces advanced router configuration, advanced LAN switching theory and design, VLANs, Novell IPX, and threaded case studies. Topics include router elements and operations, adding routing protocols to a configuration, monitoring IPX operations on the router, LAN segmentation, and advanced switching methods. Upon completion students should be able to describe LAN and network segmentation with bridges, routers and switches and describe a virtual LAN.

Prerequisite(s)

NET 126

Co-Requisite(s)

None

Required Textbook(s)

Switching Basics and Intermediate Routing: Companion Guide,
ISBN 1-58713-170-6
Cisco Networking Academy Program: Lab Companion
Third Edition Cisco Press ISBN 1-58713-171-4

Other Required Materials/Software

3 ½" floppy disks or flash drive

Program Learning Outcomes

Program Learning Outcomes may be found on the Wayne Community College Website on this link: <http://www.waynecc.edu/academic-programs/outlines/A25340.pdf>

Course Learning Outcomes(Competency)

1. Demonstrate the fundamentals of VLSM and RIPv2
2. Describe the fundamentals of link-state routing protocols, single-area OSPF concepts and configuration.
3. Demonstrate knowledge of EIGRP and the steps for configuring, verifying and troubleshooting.

4. Discuss problems in LANs and possible solutions that can improve LAN performance using bridges, switches, and routers for LAN segmentation.
5. Demonstrate the pros and cons of LAN segmentation with LAN design, and Layer 2 bridging and switching functions.
6. Demonstrate the steps for configuring and verifying switch configuration and password recovery and firm upgrade procedures.
7. Discuss Spanning Tree Protocol and redundant topologies.
8. Discuss the concepts of VLANs, and configure, verify, save, delete, and troubleshoot VLANs.
9. Describe the concepts, operation, and configuration of VLAN Trunking Protocol

Teaching/Learning Methods

Assigned readings, lectures, student discussions, labs, case materials, and presentation of supplemental information, Internet assignments, and regular attendance

Course Requirements / Methods of Evaluation

Participation and attendance are expected. Students are encouraged to meet every scheduled class as this would provide maximum educational benefit, and it is also an indication of a student's maturity and seriousness toward his or her work. If a student is absent from class for any reason, the student is totally responsible for all discussions, notes, and materials missed. If you are absent or need to miss part of a class you should make plans to get notes from a classmate.

Tests and quizzes. In addition to the online assessments, a minimum of two objective and/or essay tests will be given. These tests will cover all lecture material and outside assignments. Tests will be announced in advance and students should plan accordingly. There will be three comprehensive exams: one online, one from the instructor and one for the lab. At the instructor's discretion, the online exam may be taken again if the student fails. **However, if the online exam is taken again, the score needed to pass will be incremented by five points. The maximum number of tries for the online exam will be three. No other exam may be taken over. The online exam and the lab exam must be passed in order to pass the course.**

Unannounced quizzes may be given over material covered in lectures. Quizzes may not be made up.

Grading Policy/Criteria

The final grade will be calculated on the basis of:

On-Line Assessments	20%
On-line Final Exam	20%
Labs	20%
Project	20%
Engineering Journal	10%
Attendance	10%

Grading will be on a seven-point scale:

93 – 100 =	A
85 – 92 =	B
77 – 84 =	C
70 – 76 =	D
Below 70 =	F

Academic Integrity Statement

See WCC Student Handbook or the College catalog. Any student caught violating the WCC Code of Student Academic Integrity Policy, (i.e., cheating, plagiarizing, or other dishonorable acts), in academic work is subject to disciplinary action. }

Students with Disabilities

Students with disabilities can contact the Disability Coordinator, Deana Holland, in the Student Development office, 919-735-5151, extension 223 or at dbholland@waynecc.edu. }

Non-Discriminatory Statement

Wayne Community College is committed to a policy of providing educational opportunities to all students regardless of economic or social status, beliefs, sexual orientation, age, national origin, or physical or mental disability.

Student Attendance Policy

The college believes students demonstrate responsibility for and commitment to their educational goals through regular attendance; therefore, students must attend 80% of the total hours of any class to receive a passing grade. Instructors will excuse no absences under this policy.

Phones/Pagers/Beepers

Cell phones, beepers, and walkie-talkies cause unnecessary disruption to the teaching/learning process in the classroom, lab or library setting. Out of courtesy to others, all systems of communication should be in quiet position during instructional, lab or library time.

Additional Information From the Instructor/Miscellaneous

Although I encourage classroom discussion, I find side conversations to be quite distracting. Therefore, I will feel free to deduct points from your semester grade when I feel that your behavior is disrupting the class. If this is not a sufficient deterrent, then you will be told to leave the classroom. Consider this to be your first warning! The classroom is for learning.

Course Outline

Week 1 & 2: Introduction to Classless Routing

1. VLSM
2. RIP Version 2

Week 3. Single-Area OSPF

1. Link State Routing Protocols
2. Single Area OSPF Concepts
3. Single Area OSPF Configuration

Week 4 & 5. EIGRP

1. EIGRP Concepts
2. EIGRP Configuration
3. Troubleshooting Routing Protocols

Week 5 & 6. Switching Concepts

1. Introduction to Ethernet/802.3 LANs
2. Introduction to LAN Switching
3. Switch Operation

Week 7. Switches

1. LAN Design
2. LAN Switches

Week 8 & 9. Switch Configuration

1. Starting the Switch
2. Configuring the Switch

Week 9 & 10. Spanning Tree Protocol (STP)

1. Redundant Topologies
2. STP Overview

Week 11 & 12. VLANs

1. VLAN Concepts
2. VLAN Configuration
3. Troubleshooting VLANs

Week 13 & 14. VTP

1. Trunking
2. VTP
3. Inter-VLAN Routing

Week 15. Project

Week 16. Exam preparation and review.