

**Computer Science/Information Technology**  
**Honors Computer Networking 3**  
**Room 208**  
**Mr. Hankel**

**Course Description**

Switching Basics and Intermediate Routing is the third of four courses leading to the Cisco Certified Network Associate (CCNA) designation. The course focuses on the following advanced IP addressing techniques: Variable Length Subnet Masking (VLSM), Intermediate routing protocols such as RIP v2, single-area OSPF, and EIGRP, Command-line interface configuration of switches, Ethernet switching, Virtual LANs (VLANs), Spanning Tree Protocol (STP), and VLAN Trunking Protocol (VTP). Students will be required to apply lessons from CCNA 1 and 2 to a network and should be able to explain how and why a particular strategy is used.

**Prerequisites**

Students should have completed Honors Computer Networking 1 and 2.

**Course Requirements**

1. Attendance- When absent from class, work time must be made up for 30 minutes before or after school. If a student is absent from class for more than 5 classes, he or she will automatically fail class if the work time is not made up. This is the school policy.
2. Tardies- Class begins when the tardy bell rings, therefore it is essential that you are to class on time.
  - two tardies will result in a 30-minute detention after school
  - four tardies will result in two 30-minute detentions after school
  - each additional tardy will result in a 30 minute detention after school
3. The students will:
  - come prepared for class, this includes a pen and pencil
  - contribute positively to the class
  - successfully and timely complete all assignments, quizzes and tests
  - make efficient use of work time
  - be respectful of other students, their property, and lab equipment and furniture
4. Quizzes- From time to time, unannounced quizzes will be given in class. These will cover information covered the previous periods. There will be no way to make up these quizzes.
5. Tests- Tests will be given online at the end of every chapter, and one final at the end of the semester.
6. Labs- A majority of the information in this course is received through hands-on lab activities. Look at the course outline to find the labs that need to be completed for the week. A time before school, 0-hour, has been designated for this purpose. Please see me if you have a conflict with this time.

**Course Objectives**

Networking 3 is an integral step towards achieving CCNA Certification. Upon completion of this course, students will be able to perform tasks related to:

1. Variable Length Subnet Masking (VLSM)
2. Intermediate routing protocols (RIP v2, single-area OSPF, EIGRP)
3. Switching Concepts
4. Switches
5. Switch Configuration
6. Spanning Tree Protocol (STP)
7. Virtual LANs (VLANs)
8. VLAN Trunking Protocol (VTP)

## Grading

<u>Item</u>	<u>Percentage</u>	<u>Comments</u>
Lab Grades	20%	Assigned by instructor
Journal/Documentation	15%	Engineering Journal
Quizzes and Chapter Tests	25%	Online and Written
Semester Final Exam	20%	Online
Skills-Based Final Exam	20%	Discussed before Final

## Course Outline

Week Seven -October 6-10

- Module One
- Lab 1.1.4- Calculating VLSM Subnets**
- Lab 1.2.3- Review of Basic Router Configuration with RIP**
- Lab 1.2.4- Converting RIP v1 to RIP v2**
- Lab 1.2.5- Verifying RIP v2 Configuration**
- Lab 1.2.6- Troubleshooting RIP v2 using Debug**
- Test- Module One

Week Eight -October 13-17

- Module 7.3 Semester Two
- Lab 7.3.5- Configuring IGRP**
- Lab 7.3.6- Default Routing with RIP and IGRP**
- Lab 7.3.8- Unequal Cost Load Balancing with IGRP**

Week Nine -October 20-24

- Module Two
- Lab 2.3.1- Configuring the OSPF Routing Process**
- Lab 2.3.2- Configuring OSPF with Loopback Addresses**
- Lab 2.3.3- Modifying OSPF Cost Metric**
- Lab 2.3.4- Configuring OSPF Authentication**
- Lab 2.3.5- Configuring OSPF Timers**
- Lab 2.3.6- Propagating Default Routes in and OSPF Domain**
- Test- Module Two

Week Ten -October 27-31

- Module Three
- Lab 3.2.1- Configuring EIGRP Routing**
- Lab 3.2.3- Verifying Basic EIGRP Configuration**
- Test- Module Three

Week Eleven -November 3-7

- Module 11.1 Semester Two
- Lab 11.2.1a- Configuring Standard Access Lists**
- Lab 11.2.1b- Standard ACLs**
- Lab 11.2.2a- Configuring Extended Access Lists**
- Lab 11.2.2b- Simple Extended Access Lists**
- Lab 11.2.3a- Configuring a Named Access List**
- Lab 11.2.3b- VTY Restriction**
- Lab 11.2.3c- Simple DMZ Extended Access Lists**

Week Twelve -November 10-14

- Module Four
- Test- Module Four

Week Thirteen -November 17-21

- Module Five
- Test- Module Five

Week Fourteen -November 24-28

- Module Six
- Lab 6.2.1- Verifying Default Switch Configuration**
- Lab 6.2.2- Basic Switch Configuration**
- Lab 6.2.3- Managing the MAC Address Table**
- Lab 6.2.4- Configuring Static MAC Addresses**
- Lab 6.2.5- Configuring Port Security**

Week Fifteen -December 1-5

- Module Six
- Lab 6.2.6- Add, Move, and Change MAC Addresses**
- Lab 6.2.7a- Managing Switch Operating System Files**
- Lab 6.2.7b- Managing Switch Startup Configuration Files**
- Lab 6.2.8- Password Recovery Procedure on a Catalyst 2900 Series Switch**
- Lab 6.2.9- Firmware Upgrade of a Catalyst 2900 Series Switch**
- Test- Module Six

Week Sixteen -December 8-12

- Module Seven
- Lab 7.2.4- Selecting the Root Bridge**
- Lab 7.2.6- Spanning-Tree Recalculation**
- Test-Module Seven

Week Seventeen -December 15-19

- Module Eight
- Lab 8.2.3- Configuring Static VLANs**
- Lab 8.2.4- Verifying VLAN Configurations**
- Lab 8.2.6- Deleting VLAN Configurations**
- Test- Module Eight

Week Eighteen -January 5-9

- Module Nine
- Lab 9.1.5a- Trunking with ISL**
- Lab 9.1.5b- Trunking with 802.1q**
- Lab 9.2.5- VTP Client and Server Configurations**
- Lab 9.3.6- Configuring Inter-VLAN Routing**
- Test- Module Nine

Week Nineteen -January 12-16

- Review for Semester Final
- Hands-on Lab Final
- Written Final

**Note: This outline is subject to change at anytime I see fit to do so.**