

Syllabus Part II
EDISON STATE COMMUNITY COLLEGE
CYB 247S Switching & Routing
3 CREDIT HOURS

Section/Term:	CYB-247S-801FS
Class Meeting Time:	ONLINE
Location:	ONLINE
Required items:	All course reading and lab assignments will be completed on the Cisco Netacad website (www.netacad.com) and submitted to the Edison State Blackboard website (www.edisonohio.blackboard.com). You are required to use your Edison State email for all course work and communications in this course. The Cisco Portable Command Guide is recommended for all 240 level courses.
Faculty:	Rich Valerio
Faculty Qualifications:	Bachelor of Science: Network Operations and Security, Western Governors University, 2024 Associate of Applied Business: Network and Computer Security, Edison State Community College, 2015 Associate of Applied Business: Network Computer Management, Edison State Community College, 2015 Cisco CCENT, Cisco CCNA Routing and Switching, Cisco CCNA Security Certifications: CISCO 2016, 2019, 2024
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Faculty Phone:	937-778-7825
Faculty Office Hours:	Room 434, W 3:00 p.m. – 6:00 p.m.
Faculty Contact:	If you have questions or concerns, please contact me via email with the course name and number in the subject line (CYB 236 801FS) through your Edison State email. You are encouraged to set up an appointment to meet virtually or stop by my office.

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All course assignments will be submitted on the Edison State Blackboard Course website (www.edisonohio.blackboard.com) You are required to use your Edison State email for all course work and communications in this course.

Getting Started

Read this entire document and familiarize yourself with the Blackboard course site for this class. All of the assignments, and any information you will need for completing this course will be available on the Edison blackboard course website and are as outlined in this syllabus.

Course Objectives

This course focuses on switching technologies and router operations that support small-to-medium business networks. It includes wireless local area networks (WLANs) and security concepts. Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate LAN security threats, and configure and secure a basic WLAN.

By the end of the course, students will be able to:

- Configure VLANs and Inter-VLAN routing, applying security best practices.
- Troubleshoot inter-VLAN routing on Layer 3 devices.
- Configure redundancy on a switched network using STP and EtherChannel.
- Troubleshoot EtherChannel on switched networks.
- Explain how to support available and reliable networks using dynamic addressing and first-hop redundancy protocols.
- Configure dynamic address allocation in IPv6 networks.
- Configure WLANs using a WLC and L2 security best practices.
- Configure switch security to mitigate LAN attacks.
- Configure IPv4 and IPv6 static routing on routers.

Teaching Philosophy

The Netacad Learning Academy Online Packet Tracer labs utilized in this course are developed to provide a virtualized environment utilizing a hands-on approach to Learning. Many labs will be structured around configuring and troubleshooting hardware and software that makes up and secures enterprise networks.

Handling and understanding computer components and how they work and interact within a Network is what this class is all about. As such, attaining as much hands-on experience is a goal of this class. Lab Equipment is available on campus if needed. Please email me and let me know what lab equipment you need access to and we can make a plan to get you the hands-on time you need. Every effort will be made to include the use of available, relevant equipment to reach that goal.

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The Module quizzes, exams, and assessments are meant to assess the progression of your knowledge of the material. The Packet Tracer labs are built as practical situations to apply what you've learned in a virtualized environment that resembles what you'll see in the IT world.

Daily Responsibilities

You are expected to use proper English, sign your emails with your full name, and include the course name and number in any correspondence at the college level. Remember, most of you are in college to prepare for technical careers, and using proper grammar and spelling demonstrates respect and professionalism.

Follow the instructions, course outline, and rubrics to stay on track. Manage your time effectively to avoid falling behind. Trying to catch up later can be overwhelming. All assignments must be completed by Sunday at 11:59 PM in the week they were assigned. However, you can work ahead on many assignments, such as chapter quizzes, exams, and labs, to plan accordingly. Please note that assignments completed early may not be graded until after the due date.

This course will require a significant amount of time. The time needed per week will vary, so you need to plan accordingly. As per the time requirements specified in the Edison Academic Catalog, students should set aside a minimum of 18 hours per week for this course. Students are responsible for making up any missed work. Students must complete any missed assignments. I will not repeatedly approach students to complete work; it's your responsibility.

Grading and Evaluation Policy

Discussion Post Assignments

You will be responsible for completing the Discussion Board posts included in each module of the course. The Discussion Board posts allow you to engage with, share your insights, reflect on course topics, and collaborate with your peers. Typically, the discussions will deepen in complexity as the semester progresses, encouraging more critical thinking and application of concepts. These discussion posts combined account for 5% of your overall grade for the course.

Packet Tracer Assignments

You will be responsible for completing the Packet Tracer assignments included in each module of the course. The Packet Tracer assignments provide real world scenarios to configure, secure, maintain, and troubleshoot common enterprise network hardware and/or issues. Typically, they increase in difficulty as the semester progresses. These assignment scores combined account for 20% of your overall grade for the course.

Quizzes/Exams

You will be responsible for completing the Module quizzes and Exams following each module of the course. Those exams will consist of multiple choice, matching, short answer, and possibly essay questions. They are all open-book, yet timed. Each exam will range from 20 to 50

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questions. These too, typically increase in difficulty as the semester progresses. These assessment scores combined account for 35% of your overall grade for the course.

SBA/Final Exam

You will be responsible to complete the Skills Based Assessment and Final Exam of your knowledge at the conclusion of this course. The Final Exam will consist of multiple choice, matching, short answer, and possibly essay questions. The Skills Based Assessment evaluates your configuration, security, and troubleshooting abilities utilizing the Packet Tracer Program. They are all open-book, yet timed. Each exam will range from 20 to 50 questions. These assessment scores combined account for 40% of your overall grade for the course.

Weighted Grading Scale

Assessed Items	%
Discussion Board Posts	5%
Packet Tracer Assignments	20%
Quizzes and Exams	35%
Final Exams	40%
Total	100%

Final grades

A letter grade is earned based on the final weighted percentage for all Assigned materials, Module Tests, Skills Demonstrations, Discussion posts and the Final Exams.

This course will conform to the following grading scale:

90 - 100%	A
80 - 89.99%	B
70 - 79.99%	C
60 - 69.99%	D
Below 60%	F

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TESTING YOUR FAITH ACT POLICY

Edison State Community College is committed to providing an environment respectful of students' beliefs. Students are permitted to be absent for up to 3 days each semester based on their faith, religion, or spiritual belief system with no academic penalty. Students must complete the Testing Your Faith Act Accommodations Form, <https://www.edisonohio.edu/services-support/registration-records>, located in "Forms" and provide a copy to their individual faculty within 14 days from the start of the course. The entire policy can be found in the student handbook at <https://www.edisonohio.edu/services-support/student-resources>.

Weekly Assignment Schedule

****** YOU ARE REQUIRED TO HAVE THE COURSEWARE MATERIAL DURING THE FIRST WEEK OF THE COURSE. **** ANY STUDENT NOT COMPLETING THE ASSIGNMENT LABLED "1.6.4 - Module Quiz: Basic Device Configuration " BY THE DUE DATE WILL BE AUTOMATICALLY DROPPED FROM THE COURSE FOR NON PARTICIPATION. ******

Week 1 Assignments

- 1.0.5 - Packet Tracer: Logical and Physical Mode Exploration
- 1.1.7 - Lab: Basic Switch Configuration
- 1.3.6 - Packet Tracer: Configure SSH
- 1.4.7 - Packet Tracer: Configure Router Interfaces
- 1.5.10 - Packet Tracer: Verify Directly Connected Networks
- 1.6.1 - Packet Tracer: Implement a Small Network
- 1.6.4 - Module Quiz: Basic Device Configuration

Week 2 Assignments

- Calculating Subnets
- 2.3.2 - Module Quiz: Switching Concepts

Week 3 Assignments

- 3.1.4 - Packet Tracer: Who Hears the Broadcast?
- 3.2.8 - Packet Tracer: Investigate a VLAN Implementation
- 3.3.12 - Packet Tracer: VLAN Configuration
- 3.4.5 - Packet Tracer: Configure Trunks
- 3.5.5 - Packet Tracer: Configure DTP
- 3.6.1 - Packet Tracer: Implement VLANs and Trunking
- 3.6.4 - Module Quiz: VLANs

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Week 4 Assignments

- 4.2.7 - Packet Tracer: Configure Router-on-a-Stick Inter-VLAN Routing
- 4.3.8 - Packet Tracer: Configure Layer 3 Switching and Inter-VLAN Routing
- 4.4.8 - Packet Tracer: Troubleshoot Inter-VLAN Routing
- 4.5.1 - Packet Tracer: Inter-VLAN Routing Challenge
- 4.5.4 - Module Quiz: Inter-VLAN Routing

Week 5 Assignments

- Exam for Modules 1-4

Week 6 Assignments

- 5.1.9 - Packet Tracer: Investigate STP Loop Prevention
- 6.2.4 - Packet Tracer: Configure EtherChannel
- 6.3.4 - Packet Tracer: Troubleshoot EtherChannel
- 6.4.1 - Packet Tracer: Implement EtherChannel
- 5.4.2 - Module Quiz: STP
- 6.4.4 - Module Quiz: EtherChannel

Week 7 Assignments

- Exam for Modules 5-6

Week 8 Assignments

- 7.2.10 - Packet Tracer: Configure DHCPv4
- 7.4.1 - Packet Tracer: Implement DHCPv4
- 9.3.3 - Packet Tracer: HSRP Configuration Guide
- 9.3.4 - Packet Tracer: Data Center Exploration
- 7.4.4 - Module Quiz: DHCPv4
- 8.5.3 - Module Quiz: SLAAC and DHCPv6
- 9.3.2 - Module Quiz: FHRP Concepts

Week 9 Assignments

- Exam for Modules 7-9

Week 10 Assignments

- 11.1.10 - Packet Tracer: Implement Port Security
- 11.6.1 - Packet Tracer: Switch Security Configuration
- 13.1.10 - Packet Tracer: Configure a Wireless Network
- 13.2.7 - Packet Tracer: Configure a Basic WLAN on the WLC
- 13.3.12 - Packet Tracer: Configure a WPA2 Enterprise WLAN on the WLC
- 13.4.5 - Packet Tracer: Troubleshoot WLAN Issues

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- 13.5.1 - Packet Tracer: WLAN Configuration
- 13.5.2 - Packet Tracer: Wireless Technology Exploration
- 10.6.2 - Module Quiz: LAN Security Concepts
- 11.6.4 - Module Quiz: Switch Security Configuration
- 12.8.2 - Module Quiz: WLAN Concepts
- 13.5.4 - Module Quiz: WLAN Configuration

Week 11 Assignments

- Exam for Modules 10-13

Week 12 Assignments

- 14.3.5 - Packet Tracer: Basic Router Configuration Review
- 15.6.1 - Packet Tracer: Configure IPv4 and IPv6 Static and Default Routes
- 16.3.1 - Packet Tracer: Troubleshoot Static and Default Routes
- 14.6.2 - Module Quiz: Routing Concepts
- 15.6.4 - Module Quiz: IP Static Routing
- 16.3.4 - Module Quiz: Troubleshoot Static and Default Routes

Week 13 Assignments

- Exam for Modules 14-16

Week 14 Assignments

- Prepare for the SBA and Final Exams

Week 15 Assignments

- Netacad Skills Based Assessment

Week 16 Assignments

- Final Exam Composite 1-14
- Week 16 Discussion Board (Final Thoughts)

Please see the **assignments section** on the Edison blackboard course page for links to submit these assignments for credit towards this course. (<https://edisonohio.blackboard.com/>)