Washtenaw Community College Comprehensive Report

CNT 216 Switching, Routing and Wireless Essentials
Effective Term: Spring/Summer 2024

Course Cover

College: Business and Computer Technologies
Division: Business and Computer Technologies
Department: Computer Science & Information Technology
Discipline: Computer Networking Technology
Course Number: 216
Org Number: 13400
Full Course Title: Switching, Routing and Wireless Essentials
Transcript Title: Switching & Routing Essentials
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Three Year Review / Assessment Report
Change Information:
   Consultation with all departments affected by this course is required.
   Outcomes/Assessment
Rationale: Syllabus update/review based on course assessment.
Proposed Start Semester: Winter 2024
Course Description: In this course, students will focus on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLANs) and security concepts. Students learn key switching and routing concepts, perform basic network configuration and troubleshooting, identify and mitigate local area network (LAN) security threats, and configure and secure a basic WLAN. This is the second course in the CISCO Certified Network Associate (CCNA) curriculum at WCC and helps students prepare for a portion of the CCNA certification examination.

Course Credit Hours

Variable hours: No
Credits: 4
Lecture Hours: Instructor: 60 **Student:** 60
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
Repeatable for Credit: NO
Grading Methods: Letter Grades
Audit
Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Level 2

Requisites
Prerequisite
CNT 206 minimum grade "C-"; may enroll concurrently

General Education
Degree Attributes
High School articulation approved
General Education Area 7 - Computer and Information Literacy
Assoc in Arts - Comp Lit
Assoc in Applied Sci - Comp Lit
Assoc in Science - Comp Lit

Request Course Transfer
Proposed For:
Eastern Michigan University

Student Learning Outcomes

1. Identify correct statements pertaining to switching and routing concepts, and perform switch and router configuration.
    ### Assessment 1
    Assessment Tool: Outcome-related questions on the Cisco final exam
    Assessment Date: Winter 2025
    Assessment Cycle: Every Three Years
    Course section(s)/other population: All sections
    Number students to be assessed: All students
    How the assessment will be scored: Answer key
    Standard of success to be used for this assessment: 70% of students will score 70% or higher on the outcome-related questions.
    Who will score and analyze the data: The exam will be automatically graded by the Cisco Networking Academy server. The results will be analyzed by our full-time faculty.

2. Identify correct statements pertaining to Virtual Local Area Networks (VLANs), and configure VLANs and routing between VLANs.
    ### Assessment 1
    Assessment Tool: Outcome-related questions on the Cisco final exam
    Assessment Date: Winter 2025
    Assessment Cycle: Every Three Years
    Course section(s)/other population: All sections
    Number students to be assessed: All students
    How the assessment will be scored: Answer key
    Standard of success to be used for this assessment: 70% of students will score 70% or higher on the outcome-related questions.
    Who will score and analyze the data: The exam will be automatically graded by the Cisco Networking Academy server. The results will be analyzed by our full-time faculty.

3. Identify correct statements pertaining to, and configure Dynamic Host Configuration Protocol (DHCP).
    ### Assessment 1
    Assessment Tool: Outcome-related questions on the Cisco final exam
    Assessment Date: Winter 2025
    Assessment Cycle: Every Three Years
    Course section(s)/other population: All sections
    Number students to be assessed: All students

How the assessment will be scored: Answer key

Standard of success to be used for this assessment: 70% of students will score 70% or higher on the outcome-related questions.

Who will score and analyze the data: The exam will be automatically graded by the Cisco Networking Academy server. The results will be analyzed by our full-time faculty.

4. Identify correct statements pertaining to Wireless Local Area Networks (WLANs), and configure WLANs.

Assessment 1

Assessment Tool: Outcome-related questions on the Cisco final exam

Assessment Date: Winter 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students

How the assessment will be scored: Answer key

Standard of success to be used for this assessment: 70% of students will score 70% or higher on the outcome-related questions.

Who will score and analyze the data: The exam will be automatically graded by the Cisco Networking Academy server. The results will be analyzed by our full-time faculty.

Course Objectives

1. Configure a router to route between multiple directly-connected networks.
2. Configure and troubleshoot static routes.
3. Determine the route source, administrative distance, and metric for a given route.
4. Configure basic switch settings to meet network requirements.
5. Configure a switch using security best practices in a small to medium-sized business network.
6. Implement VLANs to segment a small to medium sized business network.
7. Configure routing between VLANs in a small to medium-sized business network.
8. Implement DHCPv4 to operate across multiple LANs in a small to medium-sized business network.
9. Implement DHCPv6 to operate across multiple LANs in a small to medium-sized business network.
10. Configure and troubleshoot EtherChannel on switched links.
11. Implement a Wireless Local Area Network (WLAN).

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom
Other: Internetworking/Security Lab

Reviewer	Action	Date
Faculty Preparer:		
John Trame	*Faculty Preparer*	*Aug 02, 2023*
Department Chair/Area Director:		
Scott Shaper	*Recommend Approval*	*Aug 04, 2023*
Dean:		
Eva Samulski	*Recommend Approval*	*Aug 04, 2023*
Curriculum Committee Chair:		

Randy Van Wagnen   *Recommend Approval*   *Mar 09, 2024*

Assessment Committee Chair:

Jessica Hale   *Recommend Approval*   *Mar 13, 2024*

Vice President for Instruction:

Brandon Tucker   *Approve*   *Mar 15, 2024*

Washtenaw Community College Comprehensive Report

CNT 216 Switching, Routing and Wireless Essentials
Effective Term: Winter 2021

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Division: Business and Computer Technologies
Department: Computer Science & Information Technology
Discipline: Computer Networking Technology
Course Number: 216
Org Number: 13400
Full Course Title: Switching, Routing and Wireless Essentials
Transcript Title: Switching & Routing Essentials
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Course Change
Change Information:
   Consultation with all departments affected by this course is required.
   Course title
   Course description
   Outcomes/Assessment
   Objectives/Evaluation
Rationale: The Cisco Networking Academy has updated the entire program. We must update our program and syllabi to match theirs in order to maintain our contract and remain an official Networking Academy. The program has been updated in consultation with Cisco's many channel partner companies.
Proposed Start Semester: Fall 2020
Course Description: The second course in the CISCO Certified Network Associate (CCNA) curriculum focuses on switching technologies and router operations that support small-to-medium business networks and 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 local area network (LAN) security threats, and configure and secure a basic WLAN. This course is part of the CISCO networking curriculum at WCC and helps students prepare for a portion of the CCNA certification examination. The title of this course was previously Routing and Switching Essentials.

Course Credit Hours

Variable hours: No
Credits: 4
Lecture Hours: Instructor: 60 **Student:** 60
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Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
Repeatable for Credit: NO
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Request Course Transfer
Proposed For:
Eastern Michigan University

Student Learning Outcomes

1. Identify correct statements pertaining to switching and routing concepts, and perform switch and router configuration.
    Assessment 1
        Assessment Tool: Outcome-related questions on the Cisco final exam
        Assessment Date: Winter 2021
        Assessment Cycle: Every Three Years
        Course section(s)/other population: All sections
        Number students to be assessed: All students
        How the assessment will be scored: Answer key
        Standard of success to be used for this assessment: 70% of students must score 70% or higher on the outcome-related questions.
        Who will score and analyze the data: Departmental faculty and external sources (if available)
    Assessment 2
        Assessment Tool: Outcome-related questions/tasks on the Cisco skills-based final exam
        Assessment Date: Winter 2021
        Assessment Cycle: Every Three Years
        Course section(s)/other population: All sections
        Number students to be assessed: All students
        How the assessment will be scored: Cisco-provided rubric
        Standard of success to be used for this assessment: 70% of students must score 70% or higher on the outcome-related questions.
        Who will score and analyze the data: Departmental faculty

2. Identify correct statements pertaining to Virtual Local Area Networks (VLANs), and configure VLANs and routing between VLANs.
    Assessment 1
        Assessment Tool: Outcome-related questions/tasks on the Cisco skills-based final exam
        Assessment Date: Winter 2021
        Assessment Cycle: Every Three Years
        Course section(s)/other population: All sections
        Number students to be assessed: All students
        How the assessment will be scored: Cisco-provided rubric

Standard of success to be used for this assessment: 70% of students must score 70% or higher on the outcome-related questions.

Who will score and analyze the data: Departmental faculty

Assessment 2

Assessment Tool: Outcome-related questions on the Cisco final exam

Assessment Date: Winter 2021

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students

How the assessment will be scored: Answer key

Standard of success to be used for this assessment: 70% of students must score 70% or higher on the outcome-related questions.

Who will score and analyze the data: Departmental faculty and external sources (if available)

3. Identify correct statements pertaining to, and configure Dynamic Host Configuration Protocol (DHCP).

Assessment 1

Assessment Tool: Outcome-related questions/tasks on the Cisco skills-based final exam

Assessment Date: Winter 2021

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students

How the assessment will be scored: Cisco-provided rubric

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Assessment Tool: Outcome-related questions on the Cisco final exam

Assessment Date: Winter 2021

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students

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Standard of success to be used for this assessment: 70% of students must score 70% or higher on the outcome-related questions.

Who will score and analyze the data: Departmental faculty and external sources (if available)

4. Identify correct statements pertaining to Wireless Local Area Networks (WLANs), and configure WLANs.

Assessment 1

Assessment Tool: Outcome-related questions/tasks on the Cisco skills-based final exam

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Assessment Cycle: Every Three Years

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Level III classroom

Other: Internetworking/Security Lab

Reviewer	Action	Date
Faculty Preparer:		
John Trame	*Faculty Preparer*	*Apr 09, 2020*
Department Chair/Area Director:		
Cyndi Millns	*Recommend Approval*	*Apr 10, 2020*
Dean:		
Eva Samulski	*Recommend Approval*	*Apr 14, 2020*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Jun 15, 2020*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Jul 14, 2020*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Jul 16, 2020*