Washtenaw Community College Comprehensive Report

CNT 196 Networking Essentials
Effective Term: Fall 2025

Course Cover

College: Business and Computer Technologies
Division: Business and Computer Technologies
Department: Computer Science & Information Technology
Discipline: Computer Networking Technology
Course Number: 196
Org Number: 13400
Full Course Title: Networking Essentials
Transcript Title: Networking Essentials
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: New Course
Change Information:
Rationale: This course addresses the current lack of a 100-level CNT course and is designed for beginning students who are interested in completing an introductory networking course but do not already have experience in the IT industry. It provides a broad range of fundamental networking skills that are applicable to many industries outside traditional networking due to the growing prevalence of smart and connected technology. Lastly, it maps to an entry-level industry certification.
Proposed Start Semester: Fall 2025
Course Description: In this course, students will explore the fundamentals of networking, including the role of network devices, various applications and protocols, basic diagnostics and troubleshooting as well as foundational security considerations. Students will also provide, calculate, and assign Internet Protocol (IP) addresses and explore how physical, data link, and network layers work together to provide connectivity. This course aligns to Cisco Certified Support Technician (CCST) Networking certification.

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 3

Requisites

General Education

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Recognize the different components involved in the communication process between clients and networks.
   Assessment 1
   Assessment Tool: Outcome-related Cisco checkpoint exam
   Assessment Date: Fall 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.
   Who will score and analyze the data: Departmental faculty will analyze the Cisco-provided results.

2. Recognize the proper design of network topology, addressing, and reachability.
   Assessment 1
   Assessment Tool: Outcome-related Cisco checkpoint exam
   Assessment Date: Fall 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.
   Who will score and analyze the data: Departmental faculty will analyze the Cisco-provided results.

3. Identify the steps for building and testing a simple computer network with Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6).
   Assessment 1
   Assessment Tool: Outcome-related Cisco checkpoint exam
   Assessment Date: Fall 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.
   Who will score and analyze the data: Departmental faculty will analyze the Cisco-provided results.

Course Objectives

1. Explain network types, components, and connections.
2. Configure an integrated wireless router and wireless client to connect securely to the internet.
3. Explain the importance of standards and protocols in network communications.
4. Explain the features of IPv4 and IPv6 addresses, and how they are used in network communication and segmentation.
5. Explain how routers connect networks together.
6. Explain how address resolution protocol (ARP) enables communication on a network.
7. Create a fully connected local area network (LAN).

8. Explain how clients access internet services.
9. Use various tools to test and troubleshoot network connectivity.
10. Explain the characteristics of virtualization and cloud services.
11. Convert between decimal, binary, and hexadecimal systems.
12. Calculate an IPv4 subnetting scheme to efficiently segment a network.
13. Explain how Domain Name System (DNS) and Dynamic Host Configuration Protocol (DHCP) services operate.
14. Compare the operations of transport layer protocols in supporting end-to-end communication.
15. Use the Cisco IOS.
16. Build a simple computer network using Cisco devices.
17. Use various tools to test network connectivity.
18. Implement an IPv6 addressing scheme.
19. Troubleshoot basic network connectivity issues.
20. Demonstrate effective troubleshooting methodologies and help desk best practices.
21. Explain common threats, vulnerabilities, and attacks on end points.
22. Configure secure user access on a network.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom
Computer workstations/lab

Reviewer	Action	Date
Faculty Preparer:		
Edward Szurek	*Faculty Preparer*	*Oct 30, 2024*
Department Chair/Area Director:		
Scott Shaper	*Recommend Approval*	*Oct 31, 2024*
Dean:		
Eva Samulski	*Recommend Approval*	*Nov 06, 2024*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*Apr 24, 2025*
Assessment Committee Chair:		
Jessica Hale	*Recommend Approval*	*Apr 26, 2025*
Vice President for Instruction:		
Brandon Tucker	*Approve*	*Apr 28, 2025*