

Course Information Form (CIF)

Course Code: CSC 130

Course Title: Introduction to Computer Networks

Department: Business/Computer Science and Technologies

Effective Date: Summer 2026

PCS Code: 1.2 - Occupational/Technical Instruction

CIP Code: 11.0901

Repeatability: 0

Credit Hours

Catalog Notation: 2-2-3

Credit Hour Distribution:

Lecture: 2

Lab: 2

Clinical: 0

Total: 3

General Course Information

Catalog Description

Introduction to local area networks, wide area networks, and the Internet; including hardware, software, terminology, components, design, connections of a network, and topologies and protocols for LANs. Listed objectives for CompTIA Network+ Certification Exam.

General Course Objectives

Students will be able to correctly configure and manage clients on an isolated laboratory LAN. Students will describe the vocabulary of network technology and will be able to troubleshoot LAN TCP/IP protocols using packet sniffing technology and TCP utilities. Students will be able to describe the operation of WANs and the Internet.

Minimum Placement Levels

English

None

Reading

None

Math

None

Prerequisites

None

Methods of Evaluation

23 lab simulations, 22 virtual machine labs, 12 quizzes, 4 exams, and a final assessment exam.

Instructional Materials and Additional Supplies

CompTIA Network+ Guide to Networks, 9th Edition. 978-0-357-50813-8

Course Content

General Learning Outcomes (GLOs)

- Critical Thinking and Information Literacy: Students will demonstrate the ability to evaluate perspectives, evidence, and implications, and to locate, assess, and use information effectively.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Unit 1: Introduction to Networking	<ol style="list-style-type: none"> 1. Describe the OSI Model, character-based names, protocols, and IP addresses emphasizing the benefits of the 7-layer model and how network communication occurs using these principles and numbering systems. 2. Apply concepts using the OSI Model, character-based names, protocols, and IP addresses. 	2.5	2.5	0
Unit 2: Network Infrastructure and Documentation	<ol style="list-style-type: none"> 1. Describe network infrastructure and documentation including how to install network operating systems and network utilities. 2. Apply network infrastructure concepts by installing Ubuntu and Zenmap 3. Work with network diagrams, symbols, and documentation. 	2.5	2.5	0
Unit 3: Addressing on Networks	<ol style="list-style-type: none"> 1. Describe the configuration of the IP protocol including IPv4, IPv6, DHCP, and DNS, and discuss the necessary steps involved in troubleshooting network connectivity issues. 2. Apply methods for assigning IP addresses, network services, and troubleshooting internet connections. 	2.5	2.5	0
Unit 4: Network Protocols and Routing	<ol style="list-style-type: none"> 1. Describe the TCP/IP core protocols, routers, and troubleshooting of routing issues. 2. Apply TCP/IP core protocols and router configuration, and troubleshoot routing issues. 	2.5	2.5	0
Unit 5: Network Cabling	<ol style="list-style-type: none"> 1. Describe transmission basics, types of cabling used for network connectivity, and troubleshooting strategies. 2. Apply effective troubleshooting techniques required to maintain structured wiring used in modern networks. 	2.5	2.5	0
Unit 6: Wireless Networking	<ol style="list-style-type: none"> 1. Describe the characteristics of wireless transmissions, wireless standards, implementation of wireless equipment, and troubleshooting strategies. 2. Implement a wireless network, configure security features, and use troubleshooting strategies. 	2.5	2.5	0
Unit 7: Virtualization and Cloud Computing	<ol style="list-style-type: none"> 1. Describe virtualization concepts, Cloud Computing, encryption protocols, and remote access methods. 2. Apply virtualization concepts, Cloud Computing, encryption protocols, and remote access methods. 	2.5	2.5	0
Unit 8: Subnets and VLANs	<ol style="list-style-type: none"> 1. Describe network segmentation using subnets and Virtual Local Area Networks (VLANs). 2. Apply network segmentation using subnets and VLANs. 	2.5	2.5	0
Unit 9: Network Risk Management	<ol style="list-style-type: none"> 1. Describe network security risk factors, including security assessment, physical security, device hardening, and security policies. 2. Apply network security factors, including security assessment, physical security, and device hardening. 	2.5	2.5	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Unit 10: Security in Network Design	<ol style="list-style-type: none"> 1. Describe network security devices, switch management, AAA, access control technologies, and wireless network security. 2. Apply network security devices, switch management, AAA, access control technologies, and wireless network security. 	2.5	2.5	0
Unit 11: Network Performance and Recovery	<ol style="list-style-type: none"> 1. Describe collecting network data, managing network traffic, network availability, and response recovery. 2. Apply collecting network data, managing network traffic, network availability, and response recovery. 	2.5	2.5	0
Unit 12: Wide Area Networks	<ol style="list-style-type: none"> 1. Describe Wide Area Network essentials, layer 1 WAN technologies, layer 2 WAN technologies, and Wireless WANs. 2. Apply Wide Area Network essentials, layer 1 WAN technologies, layer 2 WAN technologies, and Wireless WANs. 	2.5	2.5	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	30	0