

Networking Technology (NET)

NET 110. Networking Concepts. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-2.0. Work-0.0

This course introduces students to the networking field. Topics include network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols.

NET 125. Introduction to Networks. 3.0 Credits. Class-1.0. Clinical-0.0. Lab-4.0. Work-0.0

This course introduces the architecture, structure, functions, components, and models of the Internet and computer networks. Topics include introduction to the principles of IP addressing and fundamentals of Ethernet concepts, media, and operations. Upon completion, students should be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.

NET 126. Switching and Routing. 3.0 Credits. Class-1.0. Clinical-0.0. Lab-4.0. Work-0.0

This course covers the architecture, components, and operations of routers and switches in small networks and introduces wireless local area networks (WLAN) and security concepts. Emphasis is placed on configuring and troubleshooting routers and switches for advanced functionality using security best practices and resolving common network issues utilizing both IPv4 and IPv6 protocols. Upon completion, students should 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, configure WLANs using a WLC and L2 security best practices and configure IPv4 and IPv6 static routing on routers.

Prerequisites: Take NET 125, minimum grade of C

NET 175. Wireless Technology. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-2.0. Work-0.0

This course introduces the student to wireless technology and interoperability with different communication protocols. Topics include Wireless Application Protocol (WAP), Wireless Markup language (WML), link manager, service discovery protocol, transport layer and frequency band. Upon completion, students should be able to discuss in written and oral form protocols and procedures required for different wireless applications.

NET 225. Enterprise Networking. 3.0 Credits. Class-1.0. Clinical-0.0. Lab-4.0. Work-0.0

This course is designed to cover the architecture, components, operations, and security to scale for large, complex networks, including wide area network (WAN) technologies. Emphasis is placed on configuring, troubleshooting, and securing enterprise network devices and understanding how application programming interfaces (API) and configuration management tools enable network automation. Upon completion, students should be able to configure link state routing protocols, implement ACLs to filter traffic and secure administrative access, configure NAT services on the router to provide address scalability, explain techniques to provide address scalability and secure remote access for WAN, and explain how automation affects evolving networks.

Prerequisites: Take NET 126, minimum grade of C

NET 226. Network Programmability. 3.0 Credits. Class-1.0. Clinical-0.0. Lab-4.0. Work-0.0

This course covers the methodologies and tools of modern software development, applied to IT and Network operations. Emphasis is placed on network programming in current network scripting languages, using GIT and common data formats, deploying applications as containers, using Continuous Integration/Continuous Deployment (CI/CD) pipelines and automating infrastructure using code. Upon completion, students should be able to use basic Python programming and Linux skills, implement a development environment, use software development and design best practices, create a secure API, use current technologies to deploy and secure applications and compare software testing and deployment methods in automation and simulation environments.

Prerequisites: Take NET 225 , minimum grade of C

NET 289. Networking Project. 3.0 Credits. Class-1.0. Clinical-0.0. Lab-4.0. Work-0.0

This course provides an opportunity to complete a significant networking project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete a project from the definition phase through implementation.

Prerequisites: Take CTI 110, CTI 120, CTS 115, NET 226, and NOS 231, minimum grade of C