

CNT: Computer Networks Courses

Courses

CNT 3004 Introduction to Networks

College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

This course introduces the technologies and skills used in the world of networking. Emphasis is on practical applications of networking technology to real-world problems. Students gain the knowledge necessary to design, install, and configure a local area network. Students will build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.

CNT 3112 Switching, Routing and Wireless Essentials

College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

Prerequisite: CNT 3004

This course provides students with intermediate level knowledge in the architecture, components, and operations of routers, switches and wireless devices in a small network. Content includes how to configure and troubleshoot routers and switches. Students will learn how to design and configure virtual LANs, wireless LANs, inter-VLAN routing in both IPv4 and IPv6 networks, and routing protocols.

CNT 4007 Theory and Fundamentals of Networks

College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

Prerequisite: COP 2334 AND COT 3100

A functional systematic examination of the key components and theories of modern computer networks, including protocol stack, mobile networking, network security, multimedia networking and network management. Emphasizes the internet for studying network fundamentals and includes the use of tools to analyze network operations.

CNT 4403 Computer and Network Security

College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

Prerequisite: (COP 3530 OR COP 3022) AND (CNT 4007 OR COP 4635)

This course provides students with an understanding of the concepts of computer and network security using currently available technology. The course provides students with an understanding of the options available to mitigate threats within a system and teaches students the techniques that can be taken to protect a network and communication assets from cyber threats.

CNT 4416 Cyber War Gaming

College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

Prerequisite: (CIS 4385 OR CIS 4221) AND (CNT 4403)

Every organization, whether part of the government or the private sector, needs "battle-tested" IT personnel in order to defend its networks against attack. The most effective way to provide this experience is to recreate the exact scenarios, no matter how nefarious, they will see in the real world. This course provides exercises that use different specialties (network, security, visualization, software, etc.) into color-coded red and blue teams that perform specific roles in attacking and defending IT infrastructures.

CNT 4526 Wireless and Mobile Communications

College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

Prerequisite: CNT 3004

Introduces common wireless technologies and wireless network architectures including common carrier cellular networks. Learners will examine characteristics of these technologies and identify their roles in enterprise-class information technology operations. Learners will identify common tools and applications associated with these technologies and explain their roles in design, deployment and management of them. Wireless technologies strengths and weaknesses are described in the context of their effect on enterprise security, performance and cost management.

CNT 4701 Enterprise Networking, Security, and Automation

College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

Prerequisite: CNT 3112

This course covers the architecture and operations of routers and switches in complex networks. Students learn how to configure and troubleshoot routers and switches in large networks. This course provides students with skills and knowledge needed to resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the skills needed to configure DHCP and DNS related servers in a network.

CNT 5407 System and Network Security

College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

This course covers the basic strategies and tools that prepare students to engage in proactive and aggressive cybersecurity activities, with an increased focus on computer, network and system security. Students will learn about protection strategies which are most effective when dealing with cyber attacks, especially in an age of increased reliance on distributed devices. This course may require completion of graduate foundational courses in computer science or undergraduate coursework in computer networks and operating systems if a student has insufficient academic or professional experience in the field.

CNT 6519 Wireless Network Security

College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

The objective of the course is to study and understand the security and research challenges of existing and emerging wireless networks. Students will learn about various security issues such as key management, privacy, authentication and secure data aggregation and the algorithms used to resolve these issues.