CIS 134: Networking Technologies

This course introduces students to data communications and fundamental networking concepts as they relate to both wired and wireless networks. This course also covers the OSI and TCP/IP reference models and their relationships. Topics include encapsulation, de-encapsulation, and types of transmission media, as well as network structures, topologies, physical layouts, and communication protocols. The course discusses the popular protocol stacks, IP addressing, firewalls, name resolution, and proxy servers. It also introduces the concept of network management, security, and monitoring. This course covers the material in the current CompTIA Network+ certification exam. Instructional Support Fee applies. Gen. Ed. Competencies Met: Critical Thinking, Information Literacy, and Scientific Reasoning and Discovery.

Course Student Learning Outcomes

1. Explain the elements and topologies of local area networks (LAN), wide area (WAN) networks, and wireless networks (WLAN) and their commonly used protocols and services. 2. Describe the different types of routing and switching methodologies used in data transmission. 3. Define the seven layers of the OSI reference model, how the layers interact, the purpose of each layer and the relationship between the OSI reference model and computer network protocols.. 4. Describe the physical characteristics, standards, and specifications of various transmission media including structured cabling, STP, UTP, and fiber optics. 5. Design a unique TCP/IP network, including subnetting, CIDR, and address translation. 6. Analyze network traffic using various monitoring and auditing tools.
Credits: 4
Program: Computer Information Systems