Advanced Networking Practices

Outline of Instruction

Course Information
Organization: Monroe County Community College
Developers: William Hilliker
Course Number: IAS 210
Division: Business
Potential Hours of Instruction: 45
Total Credits: 3

Prerequisites: CIS 130 and CIS 209

Description
This course will cover concepts and functions of networks and related business technology. The course emphasizes administration client/server and peer-to-peer networks. The course includes description of equipment, networking procedures, and protocols. It will also include installing, configuring, and troubleshooting a computer network. It then provides coverage of the most important concepts in contemporary networking, such as TCP/IP, Ethernet, wireless transmission, and security. The course will prepare students for selecting the best network design, hardware, and software for the application or environment.

Major Units
Unit 1: Introduction to Networking
Unit 2: Networking Standards and the OSI Model
Unit 3: Transmission Basics and Networking Media
Unit 4: Introduction to Network Protocols
Unit 5: Physical and Logical Topologies
Unit 6: Network Hardware
Unit 7: WANS and Remote Connectivity
Unit 8 Wireless Networking
Unit 9: Network Operating Systems
Unit 10: TCP/IP
Unit 11: VOIP
Unit 12: Networking Security
Unit 13: Troubleshooting Network Problems
Unit 14: Data Integrity and Availability
Unit 15: Network Management

Exit Learning Outcomes

Program Outcomes
A. Identify different networking concepts, operating systems and computers that are used in today's businesses.
B. Set-up and maintain different networks, operating systems and computers that are used in today's businesses.
C. Demonstrate foundation knowledge of information security/assurance within the organization.
D. Update and upgrade different computer hardware and operating systems in today's businesses.
E. Perform routine maintenance on the different computer hardware and operating systems used in today's businesses.
Course Outcomes

In order to evidence success in this course, students will be able to:

1. Define a network
   Linked Program Outcomes
   Identify different networking concepts, operating systems and computers that are used in today's businesses.

2. Describe the common elements in a network
   Linked Program Outcomes
   Identify different networking concepts, operating systems and computers that are used in today's businesses.

3. Describe the different types of networks
   Linked Program Outcomes
   Set-up and maintain different networks, operating systems and computers that are used in today's businesses.

4. Define networking standards and where to find them
   Linked Program Outcomes
   Set-up and maintain different networks, operating systems and computers that are used in today's businesses.
   Update and upgrade different computer hardware and operating systems in today's businesses.

5. Describe TCP/IP, IPv4, IPv6, DNS and application layer protocols
   Linked Program Outcomes
   Identify different networking concepts, operating systems and computers that are used in today's businesses.
   Set-up and maintain different networks, operating systems and computers that are used in today's businesses.

6. Define network topologies and Ethernet Standards
   Linked Program Outcomes
   Identify different networking concepts, operating systems and computers that are used in today's businesses.

7. Describe networking hardware
   Linked Program Outcomes
   Update and upgrade different computer hardware and operating systems in today's businesses.
   Perform routine maintenance on the different computer hardware and operating systems used in today's businesses.

8. Define LAN, WAN, PAN, MAN and remote connectivity
   Linked Program Outcomes
   Identify different networking concepts, operating systems and computers that are used in today's businesses.

9. Describe Wireless networking
    Linked Program Outcomes
    Identify different networking concepts, operating systems and computers that are used in today's businesses.
    Set-up and maintain different networks, operating systems and computers that are used in today's businesses.

10. Describe Networking Operating Systems
    Linked Program Outcomes
    Identify different networking concepts, operating systems and computers that are used in today's businesses.
11. **Define network security and what that means**

   **Linked Program Outcomes**
   Identify different networking concepts, operating systems and computers that are used in today’s businesses.
   Demonstrate foundation knowledge of information security/assurance within the organization.

12. **Define network integrity and availability**

   **Linked Program Outcomes**
   Identify different networking concepts, operating systems and computers that are used in today’s businesses.
   Perform routine maintenance on the different computer hardware and operating systems used in today’s businesses.