

EASTERN ARIZONA COLLEGE

Networking Systems I

Course Design

2015-2016

Course Information

Division Business
Course Number CMP 250
Title Networking Systems I
Credits 3
Developed by James McBride
Lecture/Lab Ratio 2 Lecture/2 Lab

Transfer Status

ASU	NAU	UA
Elective Credit	Elective Credit	Non Transferable

Activity Course No
CIP Code 11.0100
Assessment Mode TestOut Network Custom exam (100 Questions/100 Points)
Semester Taught Fall
GE Category None
Separate Lab No
Awareness Course No
Intensive Writing Course No

Prerequisites

None

Educational Value

This course will serve several target populations:

1. Computer program majors.
2. Those seeking Network+ (CompTIA) certification.
3. Those seeking a networking background to increase chances of success in Microsoft/CISCO Certification.
4. Individuals with an interest in gaining knowledge of networking.

Description

This course is designed to provide an understanding of network signaling processes, hardware, installation, and troubleshooting. CompTIA Network+ exam objectives are covered. Topics include: protocols, connections, software, network hardware and the OSI Reference model, for use in local area networks (LANs) and wide area networks (WANs). This course also prepares one for continuing on to Microsoft and Cisco certifications.

Supplies

TestOut LabSim. Online content obtained in class; requires additional fee in lieu of book. Access to a networked personal computer.

Competencies and Performance Standards

1. Demonstrate an understanding of networks and their uses in society.

Learning objectives

What you will learn as you master the competency:

- a. Discuss why networks are used.
- b. Identify different network systems.

Performance Standards

Competence will be demonstrated:

- o in the completion of assignments from TestOut Lab Simulation Software
- o in the successful completion of units quiz
- o in the successful completion of final exam

Criteria - Performance will be satisfactory when:

- o learner identifies network variations and implementation facts in oral discussion
- o learner completes labs demonstrating proper network identification
- o learner completes tests covering network systems terms

2. Demonstrate an understanding of networking media including cables and connectors.

Learning objectives

What you will learn as you master the competency:

- a. Discuss networking media.
- b. Identify network cables by sight or name (twisted pair, coaxial, straight-through, crossover, console).
- c. Identify network cable speed capabilities by name (10BaseT, 100BaseT, 1000BaseT, 10GBaseT).
- d. Identify network connectors by sight or name (RJ11, RJ45, F-type, serial).
- e. Select and install cables for communication between computers and networking devices, given a scenario and networking requirements.
- f. Troubleshoot issues with networking media.

Performance Standards

Competence will be demonstrated:

- o in the completion of assignments from TestOut Lab Simulation Software
- o in the successful completion of units quiz
- o in the successful completion of final exam

Criteria - Performance will be satisfactory when:

- o learner expresses knowledge of networking media and access methods in oral discussion
- o learner completes labs demonstrating proper networking media implementation
- o learner completes tests covering networking media: cables and connectors

3. Demonstrate an understanding of networking devices and their corresponding software/operating system components.

Learning objectives

What you will learn as you master the competency:

- a. Discuss the elements of networking devices.
- b. Identify network interface cards and motherboard expansion slots by name or sight.
- c. Select and install the appropriate networking card, given a scenario where a new networking card is required in a new or existing computer.
- d. Identify networking and internetworking devices by name or sight (adapters, hubs, bridges, routers, switches).
- e. Select and install the appropriate networking or internetworking device(s), given a scenario with one or more wired networks.
- f. Select and install the appropriate networking devices and cables, given a scenario where a VoIP implementation exists.

Performance Standards

Competence will be demonstrated:

- o in the completion of assignments from TestOut Lab Simulation Software
- o in the successful completion of units quiz
- o in the successful completion of final exam

Criteria - Performance will be satisfactory when:

- o learner expresses knowledge of networking devices in oral discussion
- o learner completes labs demonstrating proper networking device implementation
- o learner completes tests covering networking devices

4. Demonstrate an understanding of Ethernet.

Learning objectives

What you will learn as you master the competency:

- a. Select and install appropriate network devices, given a scenario with specific Ethernet specifications.
- b. Select the appropriate Ethernet cable(s), given a scenario with network devices that need to be connected.
- c. Troubleshoot and resolve physical connectivity, given a scenario where network devices cannot communicate.

Performance Standards

Competence will be demonstrated:

- o in the completion of assignments from TestOut Lab Simulation Software
- o in the successful completion of units quiz
- o in the successful completion of final exam

Criteria - Performance will be satisfactory when:

- o learner expresses knowledge of Ethernet in oral discussion
- o learner completes labs demonstrating proper Ethernet implementation
- o learner completes tests covering Ethernet

5. Demonstrate an understanding of IP configuration.

Learning objectives

What you will learn as you master the competency:

- a. Identify and select valid IP addresses and subnet masks for network connections.
- b. Configure static IPv4 or IPv6 address information on a network connection, given a Windows system.
- c. Configure the network connection to communicate outside of the local network, given a Windows system.
- d. Configure the network connection to use DHCP for IP configuration, given a Windows system.
- e. Authorize, configure, and activate DHCP services for a network subnet, given a Windows server.

Performance Standards

Competence will be demonstrated:

- o in the completion of assignments from TestOut Lab Simulation Software
- o in the successful completion of units quiz
- o in the successful completion of final exam

Criteria - Performance will be satisfactory when:

- o learner expresses knowledge of IP configuration in oral discussion
- o learner completes labs demonstrating proper IP implementation
- o learner completes tests covering IP configuration

Types of Instruction

Classroom presentation

In-class discussion

On campus laboratory

Grading Information

Grading Rationale

1. The Post Test will represent 25% of the course grade.
2. Course learning activities will represent 75% of the course grade.

Grading Scale

- A 90-100%
- B 80-89%
- C 70-79%
- D 60-69%
- F 0-59%