National Center for Supply Chain Automation

MASTER SYLLABUS

Introduction to Networking

Semester Credit Hours: 3.00

Prerequisites: None

## COURSE DESCRIPTION

Introduction to computer networking. Topics include network standards and the Open Source Interconnection (OSI) model, topologies and Ethernet standards, network hardware, remote connectivity, wireless networking, in-depth TCP/IP, network security, network troubleshooting and network management.

## STUDENT LEARNING OUTCOMES

Upon successful completion of the course, students should be able to perform the following:

* Understand the operation of Ethernet TCP/IP;
* Identify Ethernet network topologies and applications;
* Utilize Ethernet addressing schemes, masks, and sub-masks;
* Identify device addressing methods, dynamic and static;
* Operation of Ethernet subnets, network separation and routing between them;
* Identification of operation of Ethernet network layers, managed switches, unmanaged switches;
* Describe Ethernet cabling and hardware;
* Identify and use techniques to secure network communications;
* Configure subnet addresses and access devices on different subnets;
* Replace Ethernet network components;
* Troubleshoot computer network problems.

**COURSE OUTLINE**

* Introduction to Networking (Network Models)
* Physical Layer (cabling and topology)
* Data Link Layer (Ethernet basics)
* Network Layer (TCP/IP Basics and Routing)
* Session Layer
* DNS Securing TCP/IP
* Networking Devices
* Remote Connectivity
* Wireless Networks
* Virtualization and Cloud Computing
* Mobile Networking
* Network Security