

# Dakota County Technical College

## ISTC 1045: Network Systems I: Introduction to Networking

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 1

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. This is the first course preparing the student to take the Cisco Certified Network Associate (CCNA) Routing and Switching examination.

**B. COURSE EFFECTIVE DATES:** 08/24/2014 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

### D. LEARNING OUTCOMES (General)

1. Build a simple Ethernet network using routers and switches
2. Design, calculate, and apply subnet masks and addresses to fulfill given requirements in IPv4 and IPv6 networks
3. Explain fundamental Ethernet concepts such as media, services, and operations
4. Understand and describe the devices and services used to support communications in data networks and the Internet
5. Understand and describe the importance of addressing and naming schemes at various layers of data networks in IPv4 and IPv6 environments
6. Understand and describe the role of protocol layers in data networks
7. Use Cisco command-line interface (CLI) commands to perform basic router and switch configurations
8. Utilize common network utilities to verify small network operations and analyze data traffic

### E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

### G. SPECIAL INFORMATION

None noted