

# Minnesota State University Moorhead

## CSIS 349: Networks and Data Communications

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites:

This course requires both of these prerequisite categories

1. One of these two

CSIS 155 - Introduction to Computers & Programming I

CSIS 153 - Introduction to Computers and Programming I-b

And

2. MATH 210 - Concepts from Discrete Mathematics

Corequisites: CSIS 349L

MnTC Goals: None

Introduction to concepts and terminology of data communications technology. Local area and Long-haul networks; network architecture models and protocols; communications hardware, standards, media, signaling concepts, and channel characteristics; error prevention, detection and correction; distributed data processing and data communications trends. Project required.

**B. COURSE EFFECTIVE DATES:** 04/15/2001 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Overview and Application Layer.
2. Transport Layer services.
3. Internetwork Layer services.
4. Data Link Layer.
5. Physical Layer.
6. Beyond the basics - Networking concepts, technologies, and considerations.

### D. LEARNING OUTCOMES (General)

1. Identify the layers in both the Internet and ISO/OSI network architecture models.
2. Describe the primary services/responsibilities at each layer of the Internet architecture model.
3. List and describe the services provided by protocols used at each layer of the Internet architecture model.
4. Demonstrate the use of network analysis software to identify, dissect, and analyze network packets.
5. Design and implement a subnetting scheme.
6. Distinguish between reliable and unreliable communication and identify appropriate applications of each to data communication.

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

## **G. SPECIAL INFORMATION**

None noted