**MSI 416 - Information Decision Systems II**
**Module 1 - Communications, Networking and Computer Security (2/3)**
**University at Albany, SUNY**
**Spring 2003**

## Instructor Information

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Office Hours:    W 10 - 11:30am or by appointment
Room:            BA 310b

## Class Information

Time:            MW 8 - 10am
Room:            BA 231
Dates:           January 22 - March 19
Call #:          4574
Available Labs: MIS Lab

## Course Overview

This covers Data Communications, Computer Networking and Computer Security. The second module covers ecommerce. The portion on communications will cover fundamentals of signal transmission, transmission hardware and basic concepts like multiplexing. The networking portion will cover Network Topologies, the OSI model, and the TCP/IP protocol suite. In the security portion of the course we will discuss privacy issues, vulnerabilities of the network and techniques for protecting data such as Cryptography and Steganography. Public Key Infrastructure, which is currently used for secure data transmission over the web, will also be discussed. By the end of the semester, students should expect to have a general understanding of the above topics and should be capable of simple network programming.

## Text & Reference Books

Text: Data Communications & Computer Networks: A Business Users's Approach by Curt M. White
Reference: Hackers Beware by Eric Cole
Reference: Security In Computing (Third Edition) by Charles P. Pfleeger & Shari Lawrence Pfleeger

## Learning Objectives

Students will learn:

1.  Students learn the hardware and protocols involved in transmission of data over networks
2.  Students learn the various networking architectures and their applications
3.  Students learn the use of cryptographic techniques used for secure communication on networks
4.  Students learn to analyze the threats, vulnerabilities and solutions for information system security
5.  Students gain hands-on experience in auditing & testing the security of computer networks
6.  Students develop critical thinking skills via debates on the ethics and legal issues in electronic data access

## Grading

Assignments:    25%
Paper:          25%
Exam I:         25%
Exam II:        25%

## Course Schedule

| Week | Date | Topics | Readings |
|------|------|--------|----------|
| 1 | 01/22 | Introduction to the Course | DCCN Chapter 1 |
| 2 | 01/28 | Fundamentals of Data and Signals | DCCN Chapter 2 |
|   | 01/29 | Hardware & Media Types | DCCN Chapter 3/4 |

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| 3 | 02/3 | Multiplexing | DCCN Chapter 5 |
| | 02/5 | Review / Error Detection | DCCN Chapter 6 |
| 4 | 02/10 | Exam | Closed Book |
| | 02/12 | Internet Model / OSI Model LAN Configurations | DCCN Chapter 7 |
| 5 | 02/17 | Introduction to Security/Privacy | Class Notes |
| | 02/19 | Hacking | Class Notes |
| 6 | 02/24 | Cryptography | Class Notes |
| | 02/26 | Computer Forensics (NYS Police) | |
| 7 | 03/03 | Spring Break | |
| | 03/05 | Spring Break | |
| 8 | 03/10 | PKI & SSL / Exam | Class Notes |
| | 03/12 | Steganography | |
| 9 | 03/17 | Student Presentations | |
| | 03/19 | Student Presentations | |