

CSCI 434 – Local Area Networks

Fall 2012

(Last modified 8/26/2012)

Instructor: Jinoh Kim, Ph.D.

Office: JOUR 217

Office Hours: M 3:30 PM - 5:30 PM, T 11:00 AM – 6:00 PM, TR 4:30 PM – 5:30 PM

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(please indicate the course number in the email subject line)

Class Meeting:

Location: SS124

Time: M 12:30 PM – 3:10 PM

Course Description:

This course covers the basic principles and operations of Local Area Networks (LAN's). Such topics include basic data communications, the OSI model, protocols and topologies. Those wishing to take the various networking certification exams will find this course helpful.

Expected Student Learning Outcomes:

- Define and understand basic terms associated with Data Communications.
- Understand networking topologies, to introduce the OSI Model and the IEEE 802 standards.
- Gain practical experience with subnetting, the use of IP addresses, and the fundamentals of IP routing.
- Integrate data communications, OSI model, IEEE standards, subnetting, and IP routing into an understanding of modern local area network technology.

Prerequisites:

CSCI 152 – Programming Fundamentals II, or instructor's permission.

Text Book:

- **Networks of Computer Scientists and Engineers.** Youlu Zheng and Shakil Akhtar, Oxford University Press, 2001.

Course Content:

Overview (Week 1)

- Computer Networks
- Local Area Networks
- Binary representation

Data Communication (Week 2 – Week 4)

- Transmission of digital data
- Transmission methods
- Encoding techniques
- Transmission media
- Multiplexing
- Switching techniques
- Open System Interconnection (OSI Model)

Local Area Networks (Week 5 – Week 6)

- LAN topologies
- Channel access methods
- LAN technologies: Ethernet, Token Ring, Token Bus

Midterm Exam (Week 7)

Practical Experiences (Week 8 – Week 10)

- NETWARE 3.12
 - Host & Client Installation; Administration
 - Printing
- WINDOWS NT 4.0
 - Host & Client Installation; Resource Sharing
 - Gateway between NT & Netware
 - IPX/SPX NetBEUI TCP/IP Environments
- NETWARE 5.0
 - Host & Client Installation
- LINUX
 - Host & SMB Installation

Routers and Switches (Week 11 – Week 14)

- Subnetting fundamentals
- TCP/IP basics
- Virtual LANs
- Network programming

Final Exam (Week 15)

Grading Policy:

20% Quizzes: 7-9 quizzes will be conducted and the lowest two quizzes will be discarded from the final grade

20% Homework: There will be 2-3 written homework assignments. The written assignments must be done **individually**.

25% Midterm Exam

35% Final Exam

Grading Scale:

A: 100-90

B: 89-80

C: 79-70

D: 69-60

F: Below 60

Late Policy:

The deadline for any assignment can be extended with a 15% penalty per day. No deadline can be extended by more than two days. Assignments will NOT be accepted 48 hours after the due date.

Collaboration Policy:

Students are encouraged to talk to each other, to the instructor, or to anyone else about any of the assignments. Any assistance, though, must be limited to discussion of the problem and sketching general approaches to a solution. *Each student must write out his or her own solutions to the homework.* Consulting another student's or group's solution is prohibited, and submitted solutions may not be copied from any source. These and any other form of collaboration on assignments

constitute cheating. If you have any question about whether some activity would constitute cheating, please feel free to ask.

Academic Integrity:

Your commitment as a student to learning is evidenced by your enrollment at Texas A & M University-Commerce. "All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (See Student's Guide Handbook, Policies and Procedure, Conduct). All phones, pagers, and other communication devices are to be turned off or place on silent mode during class. Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. *Anyone cheating will receive a zero on the work they are doing, and subsequent cheating will result in a failing grade.*

Makeup Policy:

There will be no makeup exams in general. Makeup exams may be given to students under extreme circumstances, such as hospitalization, serious injury, death in the family, etc, with valid documents.

Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library, Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu

Basic Tenets of Common Decency:

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (Student's Guide Handbook, Policies and Procedures, Conduct.) This means that rude and/or disruptive behavior will not be tolerated.

Disclaimer:

This syllabus is meant to provide general guidance of what to expect from this course. The instructor reserves the right to make changes as appropriate based on the progress of the class. All changes made to this syllabus during the semester will be announced. This document has been posted electronically. If you print a copy of it, please be sure to consult the last modified date of the online version to verify that your printed copy is current.