CIS 678
Internetworking

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Overview

- How
- What
- When
- Why
How am I going to grade you?

What are we going to cover?

When are you going to do it?

Why you should not take this course?
Grading

- Quizzes (Best 2 of 3) 50%
- Class participation 10%
- Homeworks + Labs 40%
Answers to Frequently Asked Questions

- Yes, I do use “curve”. Your grade depends upon the performance of the rest of the class.

- All homeworks are due at the beginning of the next class.

- All late submissions must be preapproved.

- All quizzes are open-book and extremely time limited.

- Quizzes consist of numerical as well as multiple-choice (true-false) questions.

- There is negative grading on incorrect multiple-choice questions.

- Everyone including the graduating seniors are graded the same way.
Textbook

Supplementary Texts

Prerequisite: CIS677

- Protocol Layers: ISO/OSI reference model
- Physical Layer: Coding, Manchester
- Transmission Media: UTP, Cat 5, Microwave, Radio
- Data Communication: Asynchronous vs synchronous, Baud, bit, and Hz, Half-Duplex vs Full-duplex, Modulation/Demodulation
- Packet Transmissions: Framing, Bit stuffing, byte stuffing
- Flow Control: On-Off, Window
- Error Detection: Parity, Checksum, Cyclic Redundancy Check

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Prerequisites (Cont)

- Error Recovery: Start and Stop, Go back $n$, Selective Reject
- LANs: Aloha, CSMA/CD, Ethernet, IEEE 802.3, Token Ring/IEEE 802.5, FDDI
- LAN Addressing: Unicast vs multicast, Local vs Global
- LAN wiring: 10Base5, 10Base2, 10Base-T, 100Base-T4, 100Base-TX, 100Base-FX
- Extended LANs: Hubs, Bridges, Routers, Switches
- Routing: Distance Vector vs Link State, Spanning tree, source routing
- Network Layer: Connectionless vs connection oriented
Tentative Schedule

1/7/97 Course Introduction
1/9/97 Trends/Review of CIS677
1/14/97 13. Internetworking
1/16/97 14. IP Addresses
1/21/97 15. Address Resolution Protocol
1/23/97 Quiz I
1/28/97 16. IP Data forwarding
1/30/97 17. IP encapsulation, fragmentation
2/4/97 18. IP next generation: IPv6
2/6/97 19. ICMP
Schedule (Cont)

2/11/97 20. TCP
2/13/97 Quiz II
2/18/97 20B. TCP Congestion Avoidance
2/20/97 24. DNS
2/25/97 30. SNMP
2/27/97 31. Network security
3/4/97 32. BOOTP and DHCP
3/6/97 Quiz III
3/11/97 Seniors' Grades Due
Office Hours

- Tuesday: 4:30 to 5:00 PM
  Thursday: 4:30 to 5:00 PM

- Office: 297 Dreese Lab, 2015 Neil Ave
Summary

- There will be a lot of self-reading
- Goal: To prepare you for a career in networking
- Get ready to work hard
Quiz 0: Prerequisites

True or False?

T  F

square Datalink refers to the 2nd layer in the ISO/OSI reference model
square Category 5 unshielded twisted pair cable is better than category 3 cable.
square Finding path from one node to another in a large network is a transport layer function.
square It is impossible to send 3000 bits/second through a wire which has a bandwidth of 1000 Hz.
square Bit stuffing is used so that characters used for framing do not occur in the data part of the frame.
square For long delay paths, on-off flow control is better than window flow control.
square Ethernet uses a CSMA/CD access method.
square 10Base2 runs at 2 Mbps.
square The packets sent in a connection-oriented network are called datagrams.
square Spanning tree algorithm is used to find a loop free path in a network.

Marks = Correct Answers _____ - Incorrect Answers _____ = ______
Homework 1

- Read Chapters 2-5
- Submit answers to exercises 2.8, 3.4, 4.1, and 5.5
- Due Date: Thursday, January 16th, 1997.
Homework 2

- Read Chapters 6-12
- Submit answers to exercises 6.6 (explain why), 7.7, 8.3, 9.2, 10.8, 11.6, 12.2
- Due Date: Tuesday, January 21, 1997