CIS 678
Internetworking

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http://www.cis.ohio-state.edu/~jain/cis678/
Overview

- How
- What
- When
- Why
Overview

- 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
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

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