Compen/EE 362 Computer Networks Fall 2012

MWF : 3:35-4:25, 104 Rackley
Text: *Computer Networks*, A. S. Tanenbaum and D.J. Wetherall, Fifth Edition, Prentice Hall, 2011.
ISBN 0-13-212695-8
Prerequisites: basic probability concepts.

Course Outline:

1. Introduction Ch. 1
   - uses of computer networks
   - transmission technologies, wired and wireless links
   - network protocols and the layered concept
   -example networks
2. The physical layer Ch.. 2
   - basic data rate limits
   - transmission media - wired and wireless, electromagnetic and optical
   - telephone system structure.
   - modems
   - multiplexing
   - circuit and packet switching
   - mobile telephone systems, cable television systems
3. The data link layer Ch 3.
   - Framing
   - Error detection, data link error control protocols
4. Medium access control Ch. 4
   - Multiple access protocols - ALOHA, Ethernet
   - Wireless LAN protocols
   - link layer switching and bridges
   - virtual LANs
   - ring networks (not in text).
5. The network layer Ch. 5
   - connection-oriented vs. connectionless
   - routing and congestion control
   - internetworking
   - multicasting
6. The transport layer Ch. 6
   - transport protocols, TCP/IP, UDP
   -performance issues
7. The Application Layer Ch. 7
   DNS, Mail, Web, Multimedia
8. Network security (if time permits) Ch. 8
   - cryptography and key algorithms
   - digital signatures
   - communication security

Grading EXAM #1 - in class, 20% EXAM #2 - in class, 20%
FINAL EXAM, 40% HOMEWORK, 20%.
Overall score will be, for each individual, the better of either these weights or an alternate giving higher weight to final relative to in-term exams.

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