

CSC 7702

Telecommunications

Networks

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These slides are available at:

<http://www.csc.lsu.edu/~durresi/csc7702-06/>



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

- ❑ Learning-centered course:
 - The first priority: Maximize learning
 - Your grade will depend on how much you have learned
- ❑ Activity in the class (involvement in discussing the papers) 15%
- ❑ Presentations 20%
- ❑ Homework 25%
- ❑ Research Paper 40%

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 Thursday class.
- ❑ All late submissions must be preapproved.
- ❑ Everyone including the graduating seniors are graded the same way.

What Is This Course About?

- ❑ This is a course on major communication networks
 - Data, telephone, optical, wireless, sensors
- ❑ Our goal is to understand the “big picture” of telecommunications – explain the structure and the tendency of the telecommunications industry
- ❑ How – by looking from different angles:
 - Technologies
 - Control mechanisms and protocols
 - Economic principles

Text Book

- No Text book for this course.

Supplementary Texts

- James F. Kurose and Keith W. Ross, "Computer Networking: A Top-Down Approach Featuring the Internet"
- Alberto Leon-Garcia, Indra Widjaja, "Communications Networks," Second Edition, McGraw Hill, 2004, ISBN 0-07-246352-X

Networking Review

- ❑ 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

Networking Review (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

Schedule (Tentative)

- ❑ 8/29/06 Overview
- ❑ 9/05/06 A Review of Networking Concepts
- ❑ 9/12/06 Fundamentals of Telecommunications
- ❑ 9/19/06 Frame Relay
- ❑ 9/26/06 ISDN

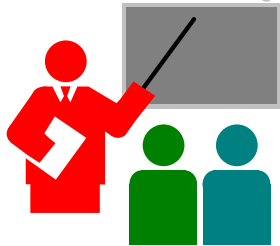
Schedule (Cont)

- ❑ 9/28/06 SONET
- ❑ 10/03/06 Wireless Networking
- ❑ 10/10/06 Optical Networks
- ❑ 10/17/06 Network Management

Office Hours

- ❑ Tuesday and Thursday: 1:30 to 2:30 PM
and by appointments
- ❑ Office: 291 Coates Hall
- ❑ Telephone: (225)-578-3902
- ❑ Email: durresi@csc.lsu.edu
- ❑ Course web page:
<http://www.csc.lsu.edu/~durresi/csc7702-06>
- ❑ GTA: , Office:, Tel.:

Summary



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