

King Fahd University of Petroleum and Minerals
College of Computer Sciences and Engineering
 Department of Computer Engineering
COE 344 Computer Networks (3-3-4)

Instructor: Dr. Marwan Abu-Amara
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Term: 052 (2nd term 2005–2006)
Day & Time: SMW 01:10 PM – 02:00 PM
Location: 24-158
Prerequisite: COE 341 (Data and Computer Communications)
Textbook: *Computer Networking: A Top-Down Approach Featuring the Internet*, J. Kurose & K. Ross, Addison Wesley, 3rd Edition, 2005.
Office Hours: SMW 10:30 AM – 11:30 AM (or by appointment)
Web Site: <http://www.ccse.kfupm.edu.sa/~marwan>

Tentative Grading Policy:

- Homeworks **5%**
- Quizzes..... **10%**
- Lab **15%**
- Major Exam I **20%** (Monday March 13, 2006 from 08:00 PM to 10:00 PM)
- Major Exam II..... **20%** (Tuesday April 18, 2006 from 08:00 PM to 10:00 PM)
- Final Exam **30%** (Comprehensive & Common, Tuesday May 30, 2006 at 07:30 AM)

IMPORTANT NOTES:

- All KFUPM regulations and standards will be enforced. Attendance will be checked each class. The KFUPM rule pertaining to a DN grade will be strictly enforced (i.e. > **9 absences** will result in a DN grade). *Check your university e-mail, both KFUPM and CCSE, regularly for warnings regarding your absences.*
- If you are late to the class for more than 5 minutes (i.e. arrive after 01:15 PM), you will **NOT be allowed to enter** the classroom and you will be considered absent for that class.
- Only university approved/certified excuses will be accepted.
- Homeworks are to be submitted **in class** on the due date during the class period. Late homeworks will **NOT be accepted**.
- You have 48 hours to object to the grade of a homework, a quiz, or a major exam from the end of the class time in which the graded papers have been distributed back. If for some reason you cannot contact me within this period, send me an email requesting an appointment. The email should be sent within the 48-hour time period.
- **NO make up exams.** ALL homeworks and quizzes will be counted towards your grade.
- Final exam is comprehensive & common.
- General guidelines for grades:

Range	≥ 90 and ≤ 100	≥ 80 and < 90	≥ 70 and < 80	≥ 60 and < 70	< 60
Minimum Grade	A	B	C	D	F

Tentative schedule

Week		Topic	Lab Experiments
1	Introduction (Chapter 1)	What is the Internet, What is a protocol? Network Edge, Network Core, and Network Access & Physical Media Delay and Loss in Packet-Switched Networks Protocol Layers and Their Service Models Internet Backbones, NAPs and ISPs Brief History of Computer Networking and the Internet	<u>Introduction</u> : Lab setting, Network devices, etc.
2	Application Layer (Chapter 2)	Principles of Application Layer Protocols The World Wide Web: HTTP File Transfer: FTP	<u>Lab1</u> : Networking Tools - OS and LAN implementation
3		Electronic Mail in the Internet The Internet's Directory Service: DNS	<u>Lab2</u> : Application Layer - Web, FTP, and TFTP Services
4		P2P File Sharing	<u>Lab3</u> : Application Layer - DNS, SMTP, and POP3
5	Transport Layer (Chapter 3)	Transport-Layer Services and Principles Multiplexing and Demultiplexing Applications Major Exam I (Monday March 13th, 2006)	<u>Lab4</u> : Application and Transport Layers - Socket Programming
6		Connectionless Transport: UDP Principles of Reliable of Data Transfer: TCP case study Principles of Congestion Control	<u>Lab5</u> : Transport Protocol Analysis - TCP
7		Principles of Congestion Control	<u>Lab6</u> : Transport & Network Protocol Analysis - UDP, IP
8	Midterm Break (April 1st, 2006)		
8	Network Layer (Chapter 4)	Introduction and Network Service Models What is Inside a Router? IP: the Internet Protocol	<u>Lab7</u> : IP Address Assignment: Static and Dynamic using DHCP
9		Routing Algorithms Hierarchical Routing Routing in the Internet	<u>Lab8</u> : IP Address Subnetting, CIDR, and VLSM
10	Link Layer & LANs (Chapter 5)	Link Layer: Introduction & Services Multiple Access Protocols and LANs Major Exam II (Tuesday April 18th, 2006)	<u>Lab9</u> : IP Address Assignment in LANs and Inter-networked LANs
11		LAN Addresses and ARP Ethernet Hubs, Bridges and Switches	<u>Lab10</u> : Dynamic Routing Protocols: RIP, and RIPv2
12		PPP: the Point-to-Point Protocol Link Virtualization: ATM	<u>Lab11</u> : Network Protocol Analysis - IEEE 802.3, ARP, and ICMP
13	Wireless & Mobile Net (Chapter 6)	Wireless Links & Network Characteristics, CDMA Wireless LANs: IEEE 802.11 WPAN & Bluetooth Mobile networking (introduction)	<u>Lab12</u> : Wireless LAN
14	Multimedia Networking (Chapter 7)	Multimedia Networking Applications Streaming Stored Audio and Video	
15		Making the Best of the Best-Effort Service: An Internet Phone Example Protocols for Real-Time Interactive applications	Final Lab Exam

* Week 1 begins on **February 12, 2006**