

Fall 2007 COSC 6377 Computer Networks

Instructor: Rong Zheng

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Lecture time: 4:00pm – 5:30pm, MW

Location: 205 sec

Office Hours: 2:00pm – 4pm M; 5:30 – 6:30 W

Class web: Go to www.uh.edu/webct, click on WebCTVista button

Lab: PGH 547 OPNET/Windows Machines

Textbook:

- [Kur05] James F. Kurose, Keith W. Ross, "Computer Networking: A Top-Down Approach Featuring the Internet", 3rd ed. Pearson Education

Reference book:

- [Farrel03] Adrian Farrel, The Internet and Its Protocols: A Comparative Approach, Morgan Kaufmann, 2004.
- [Pet03] Larry L. Peterson and Bruce S. Davie, Computer Networks - A Systems Approach, 3rd Edition, Morgan Kaufmann, 2003
- [Ste03] W. Richard Stevens, UNIX Network Programming: Networking APIs: Sockets and XTI, Vol. I, 2nd Ed., Prentice Hall, 1998
- [Stal01] W. Stallings. Wireless Communication and Networks, Prentice Hall, 2001

Prerequisites: UG Computer networks, data structure

Synopsis:

Computer networking is a rapidly advancing field. The Internet is already an integral part of society. It is therefore important for computer scientists and computer engineers to be familiar with the fundamentals as well as practices of computer networking. This graduate course will emphasize on the algorithms, protocols and performance evaluation of the Internet. Topics include routing, congestion control, multimedia networks and selected materials in wireless networks. Students will work on projects to experiment with network protocols and tools.

Grading:

Homework/Simulation projects: 40%

Survey: 10%

Midterm: 20%

Final: 30%

Academic honesty:

Any student found guilty of academic dishonesty will receive severe punishment.

Tentative Schedule:

Lecture	Topic	Reading, Assignment
1- Aug. 20	Course overview	[Kur05] Chap 1 - 3
2- Aug. 23	Fundamentals of the Internet	
3- Aug. 27	Network services, applications	
4- Aug. 29	Transport basics I	
Labor day		
5- Sep. 5	Transport basics II	
6- Sep. 10	Out of town	Introduction to ns2
7- Sep. 12		
8- Sep. 17	UDP, TCP protocol specs	
9- Sep. 19	TCP congestion control	
10- Sep. 24	Router assisted congestion control	
11- Sep. 26	Network Layer Primer	
12- Oct. 1	IP (v4, v6)	
13- Oct. 3	Intra-domain routing	
14- Oct. 8	Inter-domain routing	Review session
15- Oct. 10 Mid-term		
15 - Oct. 15	Data link layer basics	
16 - Oct. 17	Ethernet, Ethernet bridging	
17 - Oct. 22	Wireless physical layer primer	
18 - Oct. 24	Wireless LAN	
19 - Oct. 29	Multihop wireless networks I	
20 - Oct. 31	Multihop wireless networks II	
21 - Nov. 5	<i>Student presentation on selected topics</i>	
22 - Nov. 7		
23 - Nov. 12	Multimedia networking I	
24 - Nov. 14	Multimedia networking II	
25 - Nov. 19	Multimedia networking III	
26 - Nov. 21	P2P networks	
27 - Nov. 26	Review session	
28 - Nov. 28	Final Exam	