

Fall 2006 COSC 6377 Computer Networks

Instructor: Rong Zheng

Email: rzheng@cs.uh.edu

Lecture time: 4:00pm – 5:30pm, MW

Location: 205-SEC

Office Hours: 2:30pm – 4pm, MW

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, network security and selected materials in wireless networks. Students will work on projects to experiment with network protocols and tools.

Grading:

Homework: 25%

Projects: 15%

Midterm: 25%

Final: 30%

Participation: 5%

Academic honesty:

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

Tentative Schedule:

Lecture	Topic	Reading, Assignment
1- Aug. 21	Course overview	[Kur05] Chap 1 - 3
2- Aug. 24	Fundamentals of the Internet	
3- Aug. 28	Network services, applications	
4- Aug. 30	Out of Town	
Sept. 4	Labor day	
5- Sep. 6	Network diagnostic tools, OPNET	
6- Sep. 11	Transport basics I	
7- Sep. 13	Transport basics II	
8- Sep. 18	UDP, TCP protocol specs	
9- Sep. 20	TCP Congestion control	
10- Sep. 25	Router assisted congestion control	
Sep. 27	Out of Town	
11- Oct. 2	Network Layer Primer	
12- Oct. 4	IP (v4, v6)	
13- Oct. 9	Inter-domain routing	Review session
15- Oct. 11 Mid-term		
16 - Oct. 16	Mobile IP	
17 - Oct. 18	Data link layer basics	
18 - Oct. 23	Ethernet, Ethernet bridging	
19 - Oct. 25	Wireless channels	
20 - Oct. 30	Wireless LANs	
20 – Nov. 1	WPAN, WMAX	
21 – Nov. 6	Wireless Sensor Networks	
22 – Nov. 8	QoS	
23 – Nov. 13	Multimedia Networks I	
24 – Nov. 15	Multimedia Networks II	
25 – Nov. 20	P2P networks	
26 – Nov. 22	Network management, tomography, diagnostics	
27 – Nov. 27	Guest lecture	
28 – Nov. 29	Review session	
29 – Dec. 4	Final Exam	