

## Fall 2005 COSC 6377 Computer Networks

Instructor: Rong Zheng

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Lecture time: 4:00pm – 5:30pm, MW

Location: 138-SR

Office Hours: 2:30pm – 4pm, MW

TA: Mohammad A Muqsith ([muqsith1530@yahoo.com](mailto:muqsith1530@yahoo.com))

TA Office Hours: 2:00pm – 4pm, TTh

Class web: Go to [www.uh.edu/webct](http://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. 22	Course overview	[Kur05] Chap 1 - 3
2- Aug. 25	Fundamentals of the Internet	
3- Aug. 29	Network services, applications	
4- Aug. 31	Transport basics I	
Labor day		
5- Sep. 7	Transport basics II	
6- Sep. 12	UDP, TCP protocol specs	
7- Sep. 14	TCP Congestion control	
8- Sep. 19	Router assisted congestion control	
<b>9- Sep. 21</b>		<b>Canceled</b>
<b>10- Sep. 26</b>		<b>Canceled</b>
<b>11- Sep. 28</b>		<b>Canceled</b>
12- Oct. 3	Network Layer Primer	
13- Oct. 5	IP (v4, v6)	
14- Oct. 10	Intra-domain routing	
15 - Oct. 12	Inter-domain routing	
16 - Oct. 17	Mobile IP	
17 - Oct. 19	Data link layer basics	
<b>18 - Oct. 24</b>		<b>Midterm</b>
19 - Oct. 26	Ethernet, Ethernet bridging	
20 - Oct. 31	Wireless LAN	
Nov. 2 out of town		
21 – Nov. 7	WPAN, WMAX	
22 – Nov. 9	Security primer	
23 – Nov. 14	Network security I	
24 – Nov. 16	Network security II	
25 – Nov. 21	Network management	
26 – Nov. 23	Overlay network	
27 – Nov. 28	Guest lecture	
28 – Nov. 30	TBD	
29 – Dec. 5	Final Exam	