CS5310.0001/0002, Fall 2009
Computer Networks and Communication Systems

Time: 6:30 – 9:20pm W
Classrooms: 366 Avery at RRHEC and 147 ALK at TxState

Instructor: Wuxu PENG
Office: 210 Nueces, TxState & 464X Avery, RRHEC
Office Hours: 2:00 - 4:30pm, M, W
Or by appointment
Phone: 245-3874 (TxState), 716-4562 (RRHEC)
Email: wuxu@txstate.edu
Web: http://nueces21000.cs.txstate.edu/teaching/f-09/cs5310/
WebPage Username/Password: cs5310/NWCfall09

Prerequisites: CS3358 (Data Structures). Background about UNIX is desired.
Knowledge of operating systems (CS4328) or up-level standing.

Textbooks (Both required):

1. F. Halsall, *Computer Networking and the Internet* (5th ed.). Addison-Wesley, 2005. ISBN 0-321-26358-8.
2. W. R. Stevens, Bill Fenner, and Andrew M. Rudoff. *UNIX Network Programming – Networking APIs: Sockets and XTI* (3rd ed.). Addison-Wesley, 2004. ISBN: 0-13-141155-1.

General Information and Course Objectives:

This is a course covering both communications and computer networks. The whole course is divided into three phases:

(1) Fundamentals of data communications;
(2) Fundamentals of computer networks;
(3) UNIX network programming.

The first phase will follow several chapters in Part One and the second phase will mostly follow Part Two of the first textbook. In Phase three we shall study the core part of the second textbook. The material in Phase one and two will lay some foundations and clarify some basic concepts and terms. Phase three, which will be emphasized, is intended to provide concrete and practical examples related to the basic concepts and to solidify the understanding.

You are expected to gain solid knowledge about fundamental aspects of computer networks and data communications through this course. You are also expected to be able to perform elementary UNIX networking programming through the BSD *socket* API after taking this course.

Grading Policy:

Home assignments are due on time. For programming assignment, a copy of your program is required to be uploaded through *ftp* on time. The ftp site requires a username "cs5310" and a password which is the same as the one for class web page. **Out to security considerations, ftp access to my personal workstation is only allowed to on-campus computers**. As always, I will try my best to maintain fairness in grading. You are encouraged to bring any discrepancy in grading to me and I will try to resolve it promptly and fairly.

Course Evaluation:

There are three to four written homework assignments, one programming project, plus the final exam. Homework assignments are expected to be due on time. The project will implement a client-server application using Berkeley socket API and will be done on our department UNIX/LINUX Lab. The host language for the project is C (or C++ if you prefer). Your final grade for the course will be calculated as follows:

3-4 homework assignments:	50%
Programming project:	20%
Final exam:	30%

Date/Time of Final Exam:

8:00 − 10:30pm, Wednesday, Dec. 09, 2009

Attendance and Incomplete Policies:

It is your responsibility to attend the class and follow the course progress. Regularly attending the class is required. **Regularly missing class meetings will adversely affect your final grade**.

The CS Department has a strict policy and procedure for granting incomplete grades. The instructor has to provide convincing information in writing to the department Chair to get approval. Therefore incomplete will not be granted unless convincing reasons are provided. Reasons such as too much workload are not acceptable for requesting an incomplete grade.

Dropping Classes and Withdrawing (Extracted from http://www.gradcollege.txstate.edu/docs/2009-2011_GCatalog.pdf)

Dropping a class is an official action whereby a student drops one or more courses, yet remains enrolled in at least one other course. Refer to the Registration Instructions at http://www.registrar.txstate.edu for details on dropping a class.

1. The drop deadline is the first 60calendar on the Registrar's website for the most current dates.
2. A 'W' grade will be assigned automatically when a student drops one or more classes by the automatic 'W' deadline, the first 60

Withdrawing from the University (dropping all classes) is an official action whereby a student informs the University Registrar, who in turn informs the instructor(s) of record, that the student will cease attending all classes in which enrolled.

1. The deadline to receive an automatic 'W' is the first 60refer to the academic calendar on the Registrar's website for the most current dates.
2. After the automatic 'W' period, faculty assigns grades to students who officially withdraw from the University. Faculty assign a 'W' grade only to those students who have a passing average at the time the withdrawal action is officially completed. Otherwise, faculty assigns an 'F' grade.

3. Please refer to the academic calendar on the Registrar's website for the withdrawal deadline.

The student must contact the University Registrar in person, by letter, or by fax to withdraw officially from the University. Visit the Registrar's Office website at http://www.registrar.txstate.edu or contact the Registrar's Office at 512-245-2367 for the proper procedures. Students living in university residence halls must also contact the Residence Life Office in person, by letter, or by fax.

Academic Calendar for Fall 2009:

Disclaim: Information here is for your reference only. Please check with Registrar's Office for official academic calendar.

First class day	08/26/2009
Schedule changes	08/26-08/31/2009 (ends at 3pm on 08/31)
Last day to drop a course with full refund	09/11/09 (ends at midnight 09/11/2009)
Graduation application deadline	09/25/2009
Last day to drop w/"W" automatically assigned	10/26/2009 (ends at 5:00pm 10/26/2009)
Withdrawal deadline (goto zero hrs enrolled)	11/23/2009 (ends at 5:00pm 11/23/2009)
Last day of classes	12/07/2009

Academic Integrity:

Academic integrity is an integrated part of high education. Please consult appropriate Texas State documents for university's academic integrity requirements and policies.

Tentative Schedule:

1. Introduction (1 week, Book 1, Ch.1)
2. Basic concepts and terms (0.75 week, Book 1, Ch. 1)
3. Basics of digital communications (1 week, Book 1, Ch. 1)
4. Fundamentals of communication protocols (1 week, Book 1, Ch. 1)
5. Telephone networks, DSL, and Internet over Cable (1.5 weeks, Book 1, Ch. 2, Ch.5)
6. Local area networks (1 week, Book 1, Ch. 3)
7. Introduction of TCP/IP and socket API (2 weeks, Book1, Ch.6, Book 2, Ch.1,2 & 3)
8. TCP sockets (2 weeks, Book 2, Ch. 5 & 6)
9. I/O Multiplexing sockets (1.5 weeks, Book 2, Ch. 6)
10. UDP sockets (0.75 week, Book 2, Ch. 8)
11. Name and address conversions (0.75 week, Book 2, Ch. 11)

[1]Depending upon the progress, topic 11 may not be covered