CNT 5715 Computer Network Programming
Sections 001/002/003 Fall 2010

Course Description:

This course is the second communication course with focus on the programming aspects of computer networking protocols. Students will be required to develop a layered protocol stack.

Textbook:

UNIX Network Programming, Volume 1, 3rd ed., W. Richard Stevens, Bill Fenner, and Andrew Rudoff, Addison Wesley, 2004.

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Office hours: T, R: 11:00am-12:00noon, 2:00pm-4:00pm; other times by appointment.

Course objective:

To develop an understanding of the various aspects of computer network programming. Topics include: networking basics, protocol basics, Internet protocols, and socket programming. This is a project-oriented course. Students will be required to design and implement a layered protocol stack.

Prerequisites:

1. COP 3530 Data Structures and Algorithm Analysis
2. CDA 4500 Introduction to Data Communication

   or
3. Permission of instructor

Course outline:

1. Basic networking concepts
2. Layered protocol architecture
3. Internet protocols
4. Network programming essentials
5. Socket programming
6. Protocol design and implementation
7. Current networking issues

References:

1. *Advanced Programming in the UNIX Environment*, 2nd ed., W. Richard Stevens, Stephen A. Raqo, Addison Wesley, 2005.
2. *UNIX Systems Programming*, Kay Robbins and Steven Robbins, Prentice Hall, 2003
3. *TCP/IP and Linux Protocol Implementation*, Crowcroft and Phillips, Wiley, 2002.
4. *TCP/IP Illustrated*, Volumes 1 & 3, Stevens et al., Addison Wesley.
5. *Internetworking with TCP/IP*, Volumes I & III. Comer et al., Prentice Hall.
6. Relevant papers.

Homework & tests:

Reading assignments will be given on a weekly basis. Exercises may be given at the end of each topic. There will be several programming assignments. One of them will be your term project. Scope and contents of the term project are open for discussion in the beginning of the course. There will be 1-2 tests that will be later announced. Details about homework assignments and tests will be discussed in class later.

Grading:

Homework assignments	30%
Term project	20%
Exams	50%

Your final grade will be based on the scores you have earned from your homework assignments, term project, and exams, compared to the performance of other students in the class.

Note:

All assignments are due at the beginning of the class on the assigned due date. No late assignment will be accepted without advance permission or a very convincing reason with relevant documentation. You may work on any system to which you have access. However, all final versions of your work must be able to run on our CSE UNIX system, unless otherwise specified. Submission of homework assignments will be done electronically either via the instructor's Web page or by accessing the following URL directly. Follow the screen prompts.

http://student.cse.fau.edu/~hwsam/student/index.html

All work in this course must be **INDIVIDUAL** effort unless otherwise specified.