CS 375: UNIX System Programming

Fall 2018
Classroom: KC267
Days: TT
Time: 9:30-10:45 A.M.

Instructor: Dr. Tony Richardson
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Catalog Description: CS 375 UNIX System Programming (3) Coverage of UNIX software development and UNIX administration. Includes discussion of common shells and scripting languages, X Windows and interprocess communication.

Prerequisites: CS 215 Data Structures and Algorithms

Texts:

- N. Matthew, R. Stones, *Beginning Linux Programming*, 4th Edition, Wrox

There are several on-line resources available at the course web site that will be used during the semester.

Course Structure: The class will meet three hours a week in lecture. Several small projects will be assigned throughout the semester. These projects will be designed, constructed and tested outside of class hours.

Grading: The course grade will be determined from three components weighted as follows:

Item	Weight
Homework	10%
Programming Assignments	70%
Final Project	20%

Homework: To succeed in this course all homework problems should be completed. Students may collaborate on homework (in fact, this is encouraged), but each student must submit their own work. Each student is expected to be able to recreate any homework solutions submitted.

Programming Assignments: There will be several programming assignments during the semester. These assignments are to be your own work. Any attempt to look at another student's work in any form (written, printed, or electronic) will be considered to be a violation of the Academic Honor Code.

Final Project: There will **not** be a final exam. There will be a final programming assignment that is due at the time of the scheduled final exam.

Attendance: Regular attendance is critical to your success in this course. Please refer to the section on Class Attendance in the student handbook.

Class Policies: Students are expected to abide by the Academic Honor Code. No aid should be given or requested on any examination. A late penalty of 10% per day will be accessed to all late work (homework and programming assignments), however the late penalty will never exceed 50%. Late take-home exams will not be accepted.

Topics:

- UNIX Features
- UNIX History
- Shell Programming
- File and Directory System Calls
- The UNIX Environment
- Data Management
- Python
- Processes
- Signals
- Interprocess Communication
- TCP/IP Networks
- Network Communication
- Graphical User Interfaces

Lecture Schedule

This schedule is tentative. The instructor reserves the right to change it.

Tuesday	*Thursday*
	Aug. 23 (Period 1) Course Introduction History of UNIX, UNIX features
Aug. 28 (Period 2) Ch 1: Getting Started	**Aug. 30 (Period 3)** Ch 2: Shell Programming
Sep. 4 (Period 4) Ch 2: Shell Programming	**Sep. 6 (Period 5)** Ch 3: Working with files
Sep. 11 (Period 6) Ch 3: Working with files	**Sep. 13 (Period 7)** Ch 4: The UNIX Environment
Sep. 18 (Period 8) Ch 5: Terminal Programming	**Sep. 20 (Period 9)** Ch 6: Curses, Terminal I/O
Sep. 25 (Period 10) Ch 7: Database Routines	**Sep. 27 (Period 11)** Ch 7: Database Routines
Oct. 2 (Period 12) Introduction to Python	**Oct. 4 (Period 13)** Introduction to Python
Oct. 9 **FALL BREAK**	**Oct. 11 (Period 14)** Introduction to Python
Oct. 16 (Period 15) Ch 11: Processes (fork and exec)	**Oct. 18 (Period 16)** Ch 11: Signals and Signal Handling
Oct. 23 (Period 17) Ch 12: POSIX Threads	**Oct. 25 (Period 18)** Ch 12: POSIX Threads
Oct. 30 (Period 19) Ch 13: Pipes	**Nov. 1 (Period 20)** Ch 14: Semaphores, Shared Memory
Nov. 6 (Period 21) Ch 14: Shared Memory, Message Queues	**Nov. 8 (Period 22)** Ch 15: Sockets
Nov. 13 (Period 23) Ch 15: Sockets	**Nov. 15 (Period 24)** Ch 15: Sockets
Nov. 20 (Period 25) Ch16: Using GTK+	**Nov. 22** **THANKSGIVING BREAK**
Nov. 27 (Period 26) Ch16: Using GTK+	**Nov. 29 (Period 27)** Ch16: Using GTK+
Dec. 4 (Period 28) Ch16: Using GTK+	**Dec. 6** **Reading Study Day**

There is no Final Exam in this course.
The Final Project is due by 8:00 AM on Tuesday, December 11