Syllabus

CS3393 Syllabus

CS3393 Unix Systems Programming Syllabus

Course Description

The course focuses on C programming in the Unix environment. Programming exercises include the implementation of standard utilities, such as env, ls, du, and a shell. Other topics include networking and multithreading. Emphasis is on good coding style and error checking.

Course Outline

Main Topics

- C programming and debugging
- Environment
- Unix File I/O
- Directories and Files
- Process control
- Signals
- Process Status
- I/O Redirection
- Pipes
- Handling multiple inputs, e.g. I/O multiplexing, non-blocking I/O and asynchronous I/O
- Networking
- Terminal handling
- Multithreading with Pthreads, including condition variables
- Process relationships and backgrounding
- SysV IPC: shared memory and semaphores.

Textbook

The Linux Programming Interface; Kerrisk

Recommended:

- **The C Programming Language**; Kernighan and Ritchie
- **Advanced Programming in the Unix Environment**; Stevens etal.
- **Unix for Programmers and Users**, Glass and Ables (or any other guide to the shell and tools)

Work load

- Homework: 30%. ~8 assignments
- Midterm: 30%
- Final exam: 40%

Exams are closed book, involving ~50% multiple choice and short answer and ~50% programming.

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