

CSP 551: Advanced UNIX Programming

Texts

- W. Richard Stevens, *UNIX Network Programming, Volume 1: Networking API's, Sockets, and XTI*, 2nd edition, 1997, Prentice Hall, Englewood Cliffs, NJ.
- Reference: W. Richard Stevens, *Advanced Programming in the UNIX Environment*.

Objectives

- This course provides students a hand-on introduction to UNIX programming topics such as standard application programmer interfaces, concurrent programming, UNIX processes and threads, shell programming, UNIX interprocess communications, client/server designs, and application portability.

Projects

Potential programming assignments include

- Warm-up project
- Multi-process solver
- Database management system using shell scripts
- Enhanced http client (parallel access to one server, parallel access to mirror servers)
- Reliable multicast over IP multicast
- Thread-based server

Prerequisites

- C programming.
- CS 450 or equivalent.
- User-level knowledge of UNIX

Syllabus

• UNIX Standards, Processes, Process Management	9 hours
• Files and Directories, System I/O	6 hours
• System Interprocess Communication, Pipe, and Signal	9 hours
• Concurrent Programming with Processes and Threads	9 hours
• Sockets and TCP Clients	12 hours
Total	45 hours

Edited March 2006 ([html](#), [css](#) checks)