Fall 2004

CEG 434/634: Concurrent Software Design

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CEG 434/634
Concurrent Software Design

Syllabus

Fall Quarter, 2004

Time/Place: Lecture: 4:10 – 5:25 PM, M. & W., 154 Russ Engineering Center

Instructor: Dr. Thomas C. Hartrum, 258 Russ Engineering Center
Tel. 937-775-5015, Email: thartrum@cs.wright.edu
Office Hours: M, W, 2:00-3:00; T, Th 4:00 – 5:00.

GTA: Mr. Viraj Ambetkar, 326 Russ Engineering Center
Email: vambetka@cs.wright.edu
Office Hours: 3:00-4:00 pm, Monday & Wednesday.

Prerequisite: CS400, CEG433/633, Operating Systems.
Expected background: discrete mathematics, data structure, C or C++
programming experience in UNIX.

Course Description: This course provides an introduction to concurrent program design in
the UNIX environment. Classical problems of synchronization,
concurrency, and their solutions are examined through course
projects and through readings on operating system design.

Text Books: *Required*: Operating System Concepts, 6th Ed, Silberschatz and
Galvin, Addison-Wesley, 2002.
Required: Unix Systems Programming: Communication,
Concurrency and Threads, Robbins and Robbins, Prentice Hall, 2003.
References: Interprocess Communications in UNIX: The Nooks and
Crannies, 2nd Ed, John S. Gray, Prentice Hall, 1998.

Website: CEG434_634 in WebCT.
www.cs.wright.edu/~thartrum

Grading: Programming assignment – 35 %
Homework – 5%
Midterm Exam – 25%
Final – 35%

Lectures:

The following tentative schedule defines in greater details what material is covered in the course and when it is covered.

Week	Reading	Contents
1	Robbins Ch. 1 Silberschatz Ch. 1	Welcome and introduction
2	Silberschatz Ch. 4 Robbins Ch. 2, 3	Process management, process scheduling,
3	Silberschatz Ch. 6	CPU Scheduling
4	Robbins Ch. 6	UNIX I/O, inter-process communication
5	Robbins Ch. 8	Asynchronous events – UNIX signals, **Midterm Exam**
6	Robbins Ch. 18,20	Client-server computing
7	Robbins Ch. 18,20 Gray Ch. 10	Inter-process communication with sockets
8	Silberschatz Ch. 7 Robbins Ch. 14	Process synchronization (critical sections, semaphores, etc.)
9	Silberschatz Ch. 5 Robbins Ch. 12, 13	Threads
10	Siberschatz Ch.8	Deadlocks
11		**FINAL** (Monday, 11/15/04, 5:45 PM – 7:45 PM)