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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	Silberschatz Ch.8	Deadlocks
11		FINAL (Monday, 11/15/04, 5:45 PM – 7:45 PM)