Spring 2005

CEG 434/634-01: Concurrent Software Design

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CEG 434/634
Concurrent Software Design

Syllabus

Spring Quarter, 2005

Time/Place: Lecture: 8:00 – 9:15 PM, Tu. & Th., RC150

Instructor: Dr. Yong Pei, 340 Russ Engineering Center
Tel. 937-775-5111, Email: ypei@cs.wright.edu
Office Hours: 2:00-3:00pm, Tu. & Wed.

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

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
References: Interprocess Communications in Linux: The Nooks and

Website: CEG434-634 in WebCT.

Grading: Programming assignment – 35 %
Homework – 10%
Midterm Exam – 25%
Final – 30%

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

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<th>Week</th>
<th>Reading</th>
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<th>Robbins/Silberschatz</th>
<th>Reading Material</th>
<th>Topic</th>
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<td>Robbins Ch. 1</td>
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<td>Welcome and introduction</td>
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<td>Silberschatz Ch. 1</td>
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<td>2</td>
<td>Silberschatz Ch. 4, 6</td>
<td>Robbins Ch. 2</td>
<td>Process management, process scheduling, CPU Scheduling</td>
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<td>3</td>
<td>Robbins Ch. 3, 4</td>
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<td>UNIX I/O, UNIX process control</td>
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<td>4</td>
<td>Robbins Ch. 6</td>
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<td>Basic UNIX inter-process communication</td>
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<td>5</td>
<td>Robbins Ch. 8</td>
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<td><strong>Midterm Exam</strong>, Asynchronous events – UNIX signals</td>
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<td>6</td>
<td>Robbins Ch. 18,20</td>
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<td>Client server computing</td>
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<td>7</td>
<td>Robbins Ch. 18,20</td>
<td>Gray Ch. 10</td>
<td>Inter-process communication with socket</td>
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<td>9</td>
<td>Silberschatz Ch. 6</td>
<td>Robbins Ch.13,14</td>
<td>Process synchronization (critical sections, semaphores, etc.)</td>
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<td><strong>FINAL</strong></td>
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