Fall 2013

CEG 7370-01: Distributed Computing

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CEG 7370 Distributed Computing

Syllabus

Fall Semester, 2013

Time/Place: Lecture: 4:40 – 6:00 PM, M/W, Millett 286
For the web section, the lecture videos will be made available as early as the following day.

Instructor: Dr. Yong Pei, 489 Joshi Research Center
Tel. 937-775-5111, Email: yong.pei@wright.edu
Office Hours: 12:45-2:15 pm, M/W.

Prerequisite: Undergraduate level CEG 4350 or equivalent.
Expected background: operating system, process and thread, C/C++ and JAVA programming experience in UNIX or Linux.


Text Books: Recommended:

References:

Website: CEG 7370 in Pilot.

Grading: Project assignments – 40 %
Midterm Exam – 30%
Final – 30%

Dept. of Computer Science & Engineering
Wright State University
**Lectures:**
The following tentative schedule defines in greater details what material is covered in the course and when it is covered.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic/Tests etc.</th>
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<tbody>
<tr>
<td>1-2</td>
<td>Models of distributed Systems, IPC, Networking, Remote procedure call, Remote Invocation</td>
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<tr>
<td>2-3</td>
<td>OS Supports and Security. DFS, NFS, AFS</td>
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<td>3-4</td>
<td>Name, directory &amp; discovery services, Peer-to-peer systems, Fault tolerant services, Transactions with replicated data</td>
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**Case studies of distributed computing system**
- 5-6: GFS, MapReduce, Hadoop, Hadoop Files System
- 6-7: Multimedia streaming and VOD
- 7-8: Pastry – a Structured DHT Overlay Network

(Mid-term exam Wednesday of the 8th week)

- 8-9: Distributed sensor systems
- 9-10: Mobile and Ubiquitous computing

**Distributed System Modeling and Performance Evaluations:**
- 11-12: Basic concepts in probability and stochastic process; exponential distribution, poisson process, Little’s theorem, Markov chain, balance equations, birth-death process. Selected topics from Chapters 1,2,3 of Kleinrock and handouts.
- 13-14: Queueing Theory Fundamentals; M/M/1, M/M/*. Selected topics from Chapters 3,4,5 of Kleinrock and handouts.

(Final Exam on Monday of Week 15)
- 15-16: Open-Design Project Presentations

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