CS510 Concurrent Systems

Course Overview
About the Instructor

- Instructor - Jonathan Walpole
  - Professor at PSU
  - Research Interests: Operating Systems, Parallel and Distributed Systems
Course Overview

- Based on 20 research papers
  - Read them carefully!
  - Submit a written review of each paper BEFORE class!

- Class structure
  - Lectures including some student presentations
  - Instructor-led discussion

- Course web page
  www.cs.pdx.edu/~walpole/class/cs510/fall2011/home.html
Topics

- **Synchronization**
  - Locking
  - Non-blocking Synchronization (NBS)
  - Things that complicate NBS
    - Hardware and compiler-level reordering
    - Memory reclamation
  - Relativistic Programming via RCU
  - Transactional Memory

- **Scalability**
  - Shared memory hardware and software architectures
  - Message passing hardware and software architectures
Grade Structure

- Undergraduate Students:
  - paper reviews - 20%
  - midterm exam - 25%
  - in-class paper presentations - 30%
  - final exam - 25%

- Graduate students
  - paper reviews - 10%
  - midterm exam - 25%
  - in-class paper presentations - 20%
  - final exam - 25%
  - position paper - 20%
Paper Presentations

- Your paper assignments are posted on the web page
- Your presentation should last 40 minutes
- Emphasize key ideas, not irrelevant details
- Do the necessary background reading!
- Prepare a formal presentation with slides
- Send me a draft presentation in time for me to review it and give you feedback
- Make sure your presentation is of high quality!!!
Position Papers

- Short paper (<1500 words)
- Your chance to summarize
  - current research trends in concurrent systems
  - future directions
- By the end of this class you should have a clear understanding of research directions and challenges
- I want to know what you think
  - ... not a straight summary of the papers we have studied
Before Class 2

- Email me and let me know if you are a graduate or undergraduate student
- Visit the class web page
  www.cs.pdx.edu/~walpole/class/cs510/fall2011/home.html
- Find your first paper assignment
  - I will post them before Wednesday
  - Email me if there is a problem!
- Read class 1 papers and papers for class 2
- Submit paper reviews as directed on the class web site