Welcome to CS 423
Operating System Design

University of Illinois at Urbana-Champaign

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What’s my End Result?

Before CS 423:
- Knowledge of C/C++
- Basic knowledge of Linux/POSIX APIs and functions

After CS 423:
- In-depth knowledge of how basic OS functions work
- Knowledge of virtual machines
- Introduction to advanced OS topics
  - Distributed system issues, embedded system issues, Map/Reduce, etc.
- Ability to modify OS code
The Team

Tarek Abdelzaher (Instructor)
- Office: 4126 SC
- Office Hours: Wednesdays 11am-noon.
- Tel: (217) 265-6793
- zaher@illinois.edu

- TAs: Haitong Tian and Anirudh Jayakumar
- Office hours will be announced on class Webpage

Online Discussion, etc

Spring2016/CS423 on Piazza

http://piazza.com/illinois/spring2016/cs423
Textbooks

- **Recommended:** Internals and Design Principles (8th Edition), William Stallings, 2014
- **Optional:** Virtual Machines, James E. Smith and Ravi Nair, Elsevier / Morgan Kaufmann, 2005

Your CS 423 “Mission”

- Come to class, MWF, 10-10:50am
  - Please participate actively...
- Code 4 programming assignments (in teams of 3 or 4)
  - Same team for all four assignments
- Take Midterm, Monday March 7th
- Do two homeworks:
  - (i) “prereqs”, (ii) “practice final”
  - Work on homework independently
- Take Final, Wednesday May 4th
- If taking class for 4 credits: Do project
Grading

- **Final Exam**: 30%
- **Mid-term Exam**: 25%
- **Homework** (2 total): 10%
  - 5%, 5%
- **Team Machine Problems** (4 total): 25%
  - 4%, 7%, 7%, 7%
- **Participation**: 10%
  - Class involvement
  - Pop quizzes

Please...

- No late homework/MP submissions
- 1 week window for re-grades from return date
- Cheating policy: Zero tolerance
  - 1st offense: get zero
  - 2nd offense: fail class
- Example: You submitted two MPs in which solutions were not your own. Both were discovered at the same time. You fail class.
Introduction

- What is an operating system?
- What is it for?
- What are virtual machines?
- What special applications need additional support?

Course Objectives

- Advanced knowledge of components of an operating system and their internal design.
  - CS 241 is a prerequisite
- Introduction to virtual machines
- Advanced topics in operating systems
- Write, compile, debug, and execute modifications to operating system code
Schedule

- See class webpage
  https://courses.engr.illinois.edu/cs423/

Your to-do List

**Today:**
- Visit the class webpage and check out all the info
  https://courses.engr.illinois.edu/cs423/
- Refresh your system programming skills (e.g., review CS 241 and see C language tutorial below)
  http://www.lysator.liu.se/c/bwk-tutor.html

**Soon:**
- Team up for solving programming assignments
- Familiarize yourself with Piazza