Welcome to ECE5658: Operating System Design

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http://csl.skku.edu
Basic Information

- **Course schedule**
  - 13:00 - 19:00 (Monday)
  - Room Oceania, Samsung Electronics

- **Homepage**
  - [http://csl.skku.edu/ECE5658M10/](http://csl.skku.edu/ECE5658M10/)

- **Mailing list**
  - [ece5658@cs.skku.edu](mailto:ece5658@cs.skku.edu)
  - Send a mail to [jinsookim@skku.edu](mailto:jinsookim@skku.edu) to subscribe to the mailing list.
Instructors

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Prerequisites

- Undergraduate Operating Systems
- Undergraduate Computer Architecture
- Undergraduate Systems Programming
Course Plan

- **Lectures**
  - Backgrounds and basic concepts
  - Advanced topics on operating systems

- **Class discussions**
  - 2 or 3 papers a week

- **Reading assignments**
  - You should read them BEFORE the class
  - Submit paper evaluation forms
Class Materials

- Quality research papers will be used in class
  - ACM Transactions on Computer Systems (TOCS)
  - ACM Computing Survey
  - ACM Int’l Symp. on Operating System Principles (SOSP)
  - Usenix Symp. on Operating Systems Design and Implementation (OSDI)
  - Usenix Annual Technical Conference (USENIX)
  - ACM Architectural Int’l Conf. on Architectural Support for Programming Languages and Operating Systems (ASPLOS)
  - Usenix Workshop on Hot Topics in Operating Systems (HotOS)
  - Usenix Conf. on File and Storage Technologies (FAST)
  - More on http://csl.skku.edu/Links/Conferences
References (1)

- Principles of Computer System Design

References (2)

- Modern Operating Systems
References (3)

- Operating System Principles

References (4)

- Computer Systems: A Programmer’s Perspective

References (5)

- Distributed Systems Concepts and Design
  
<table>
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<tr>
<th>Week</th>
<th>Topics</th>
<th>Instructor</th>
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| Week 1 (7/5) | Course Overview  
Computer Systems Research  
Operating Systems Review | Kim        |
| Week 2 (7/12) | Processes and Threads                           | Lee        |
| Week 3 (7/19) | Memory Management                               | Kim        |
| Week 4 (7/26) | Safety and Reliability                          | Lee        |
| Week 5 (8/2)  | Storage                                         | Kim        |
| Week 6 (8/9)  | File Systems                                    | Kim        |
| Week 7 (8/16) | Virtualization                                  | Lee        |
| Week 8 (8/24) | Wrap-up, Final Exam                             | Lee        |
Reading Assignments

- **Rules**
  - This is (mostly) a paper-reading course
    - Critical reading of technical papers is a must skill to have for your research
    - Your participation is very important!
  - You should complete and submit paper evaluation forms (1 page for each paper) BEFORE each class.
  - Submit evaluations for all papers discussed in the class.
  - The list of papers to review and the evaluation form are available at the course homepage.
Paper Presentations (1)

- Paper presentation session
  - The heart of this course!
  - We will discuss two or three papers each week.
    - 30 minutes/paper for presentation
    - 15 minutes/paper for discussion
  - You need to present only one paper in this semester.
    - We have 15 enrolled students
    - Pick one among the 15 papers marked with ✫ in the course homepage
  - The success of this course (and your grade 😊) largely depends on your presentation.
Paper Presentations (2)

**Tips**

- Highlight the followings:
  - Why are the authors doing this?
  - What is exactly the problem they try to solve?
  - What are the main ideas?
  - What do you think are the weaknesses of the paper?
  - What would you do to solve the same problem?
  - ...

- Do not just summarize the paper line by line! Understand the paper first and then present it in your own way.

- Survey the related work too (past and succeeding).
  - [http://scholar.google.com](http://scholar.google.com) may help.
Grading

- **Policy (subject to change)**
  - Class participation: 50%
    - Reading assignments
    - Paper presentations
    - Discussions
  - Exam: 50%