

SDE5007: Special Topics in IC Design II

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<http://csl.skku.edu>



Basic Information



▪ Schedule

- 11:00 – 18:00 (Mon. & Wed.)
- 4 weeks
- CDI, Samsung Electronics Co.

▪ Course homepage

- <http://csl.skku.edu/SDE5007M16/>

▪ TA

- None

Instructor

▪ Jinkyu Jeong

- Assistant professor @ SSE
- Computer Systems laboratory
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- Email contact is preferred

Course Plan



- **Topic**
 - Advanced operating systems
- **Lectures**
 - Backgrounds and basic concepts of operating systems
 - Advanced topics on operating systems
- **Class discussions**
 - 2 papers a day
- **Reading assignments**
 - Read papers BEFORE the class
 - Submit paper evaluation forms (at the course homepage)

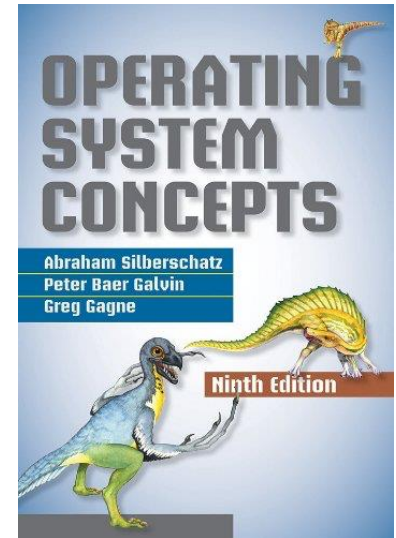
Class Materials

- **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**)
 - ACM Int'l Conf. On Measurement & Modeling of Computer Systems (**SIGMETRICS**)
 - 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)

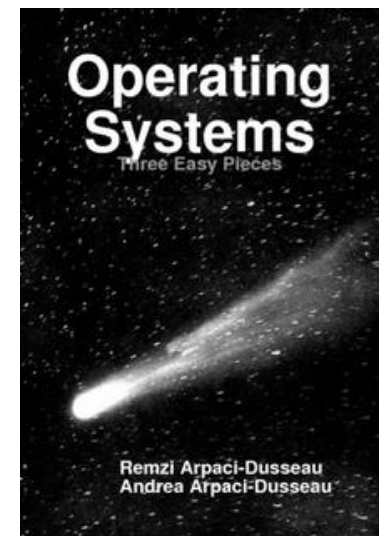
■ Operating System Concepts

- 9th Edition
- Written by A. Silberschatz, P. B. Galvin and G. Gagne
- Published by Wiley & Sons Inc.
- 2014
- <http://www.os-book.com>



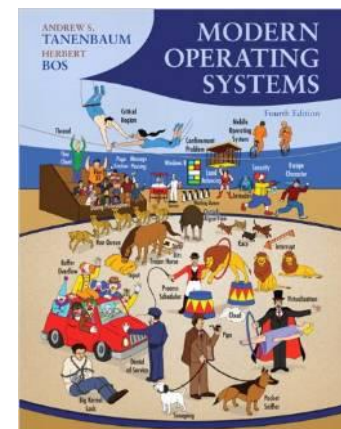
■ Operating Systems: Three Easy Pieces

- R. H. Arpaci-Dusseau, A. C. Arpaci-Dusseau
- <http://pages.cs.wisc.edu/~remzi/OSTEP/#instructors>



References (2)

- **Operating Systems: Internals and Design Principles (8th ed.)**
 - William Stallings
 - Prentice Hall, 2014
- **Modern Operating Systems (4th ed)**
 - Andrew S. Tanenbaum,
 - Prentice Hall, 2014



References (3)

■ For Linux:

- **Understanding the Linux Kernel (3rd ed.)**
 - D. Bovet and M. Cesati,
 - O'Reilly & Associates, 2015

■ For Windows:

- **Windows Internals (6th ed.)**
 - Mark E. Russinovich, David A. Solomon, and Alex Ionescu,
 - Microsoft Press, 2012

■ For Solaris:

- **Solaris Internals**
 - Richard McDougall and Jim Mauro
 - Sun Microsystems, 2001

Topics

Day	Topics
Day 1 (7/5, Mon.)	Course Overview Operating Systems Overview
Day 2 (7/7, Wed.)	Operating Systems Overview
Day 3 (7/11, Mon.)	Processes and Threads
Day 4 (7/13, Wed.)	Synchronization and Multicore Scalability
Day 5 (7/18, Mon.)	Memory Management
Day 6 (7/20, Wed.)	Storage and File Systems
Day 7 (7/25, Mon.)	Virtualization
Day 8 (7/27, Wed.)	Final Exam

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 9 enrolled students
 - Pick one among the 9 papers 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> may help.

Time Schedule

Time	Action
11:00~12:30	Lecture 1
12:30~13:30	Lunch
13:30~15:00	Lecture 2
15:00~16:00	Paper 1 presentation and discussion
16:00~17:00	Paper 2 presentation and discussion

Grading

- **Policy (subject to change)**

- Class participation: 50%
 - Reading assignments
 - Paper presentations
 - Discussions
- Exam: 50%

Questions?

