EEE3050: Theory on Computer Architectures
Spring 2017

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Sungkyunkwan University
http://csl.skku.edu
Course Information

• Schedule
  – 13:30–14:45 (Mon.), 12:00 – 13:15 (Wed.)
  – Lecture Room: #26310 (Engineering Bldg. 2)

• Instructor
  – Jinkyu Jeong (정진규, jinkyu AT skku.edu)
  – Office: #400510 (Semiconductor Bldg.)
  – Tel: 031-290-7692
  – Office Hours: 15:00 – 16:00 (Mon. & Wed.)
  – Email contact is preferred
Course Information

• (Awesome) teaching assistants
  – 이규선
    • lgs0409 AT naver.com
  – 안민우
    • mwahn402 AT gmail.com

– Office: #400509, Semiconductor Bldg.
Course Information

• Course materials will be distributed through our class web page
  – http://csl.skku.edu/EEE3050S17/Overview
  – Lecture slides, announcements, exam scores, projects, etc.
  – iCampus
    • DON'T waste your time in iCampus

• This is a junior-level course with the following prerequisites:
  – Required: Logic Design (ICE 2001)
  – Recommended: Introduction to Computer Systems (SSE 2020), System Programming (CSE2003), System Program (SWE 2001)
Caution

• This course covers basic organization and design of a computer

• Other classes covering the same topic
  – SWE3005: Introduction to Computer Architectures in college of SW
  – ICE3003: Computer Architecture in college of ICE

• For those who already had taken any of the classes should not take this course
  – Will fail this course if found
  – Be careful about this
Textbook

- **Computer Organization and Design – The HW/SW Interface**
  - Authors: David A. Patterson and John L. Hennessy [P&H]
  - Available at University Bookstore (~40,000 KRW)
  - Also available at the Samsung Library

5th Edition (Recommended)

Original 4th Edition (OK)

Revised 4th Edition (OK)

ARM Edition (4th) (Not OK)
Topics

- Overview
- MIPS instruction set architecture
- Arithmetic for computers
- Processor - Datapath & control
- Processor - Pipelining and hazards
- Cache memory
- Virtual memory
- I/O Basics
- Multiprocessors
Components of a Computer

- **The BIG Picture**

  - **Same components for all kinds of computer**
    - Desktop, server, embedded
  - **Input/output includes**
    - User-interface devices
      - Display, keyboard, mouse
    - Storage devices
      - Hard disk, CD/DVD, flash
    - Network adapters
      - For communicating with other computers
Inside the Processor (CPU)

- **AMD Barcelona**: 4 processor cores

You will understand what each block does by the end of this course!
# Course Coverage and Schedule*

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*Schedule is subject to change.*
Class Policies (1)

• **Grading system**
  – Attendance/Class Participation: 10%
  – Programming Assignments: 30% (3 times)
  – Midterm: 25%
  – Final: 35%

• **Class attendance policy**
  – If you miss any of the exams, you will fail this course
  – No lateness is allowed
  – Up to three absences will be tolerated
    • More than three absences is F
    • Notification ahead of a class is accepted

*Subject to change.*
Course Policies (2)

• Each of you will have a designated seat (aka 고정좌석 제).
  – Take a seat you like this Wednesday (3/8) and that seat will be yours for the first half of the semester.
  – We will do the same thing after the midterm.
  – Instructor reserves the right to reassign seats as necessary.

• TA will check the attendance by marking empty seats
  – Don’t be late; he may check the attendance at the beginning of the class (or at any random time)
Questions?