Welcome to SSE2030: Introduction to Computer Systems

Jin-Soo Kim (jinsookim@skku.edu)
Computer Systems Laboratory
Sungkyunkwan University
http://csl.skku.edu

SKK UNIVERSITY

Introduction

- **Basic information**
  - 15:00 – 16:15 (Tuesday & Thursday)
  - Lecture room #400102 (Semiconductor Bldg.)
  - Homepage: http://csl.skku.edu/SSE2030F10/
- **Instructor**
  - Jin-Soo Kim (jinsookim@skku.edu)
  - Computer Systems Laboratory (http://csl.skku.edu)
  - Office: Semiconductor Bldg. #400630 (6th floor)
  - Tel: 031-299-4593
  - The best way to contact me is by email.

Course Outline (1)

- **Goal:**

How does the computer system work?

or

How does your program run?

Course Outline (2)

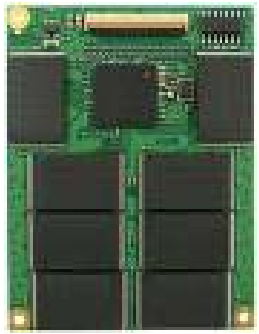
- Computer systems





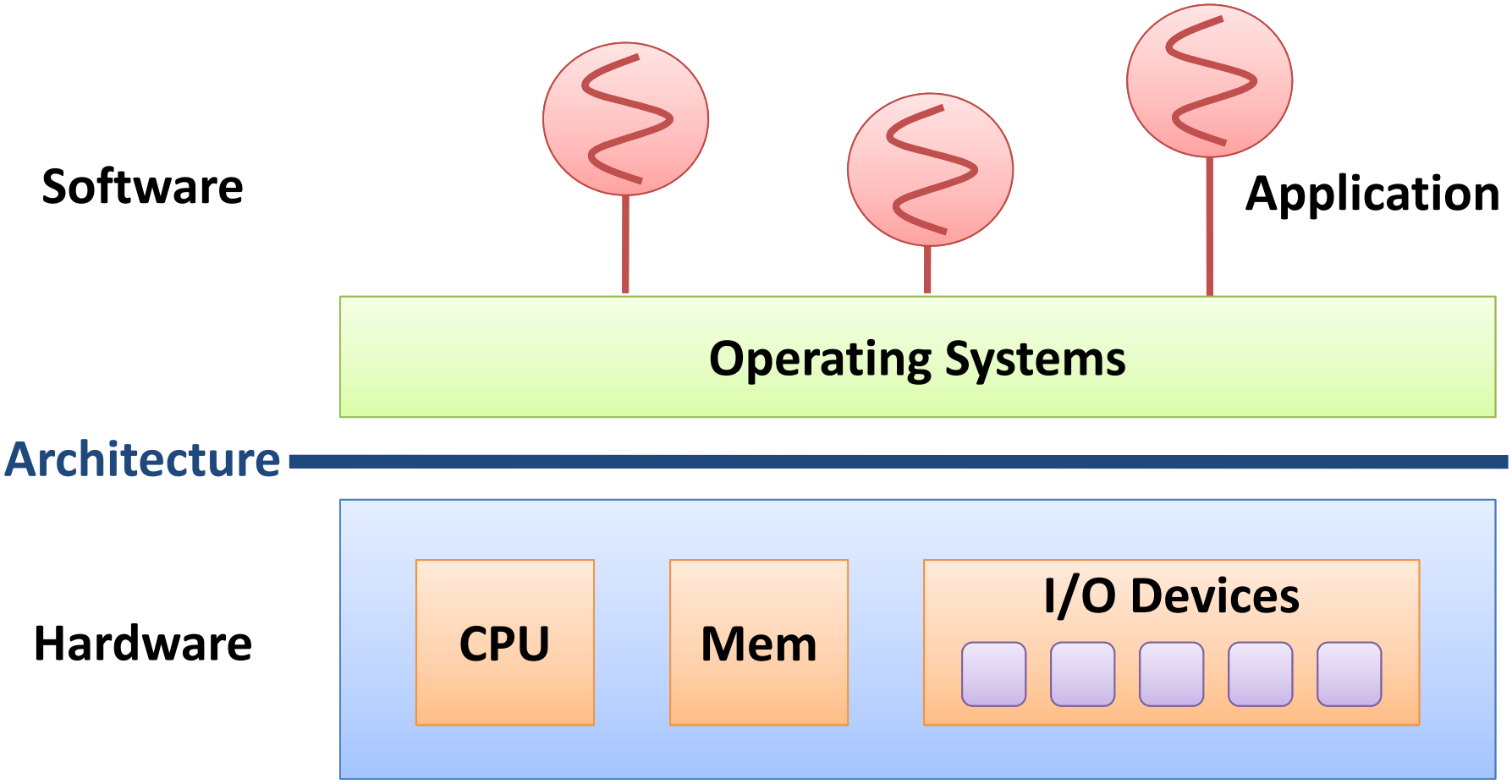




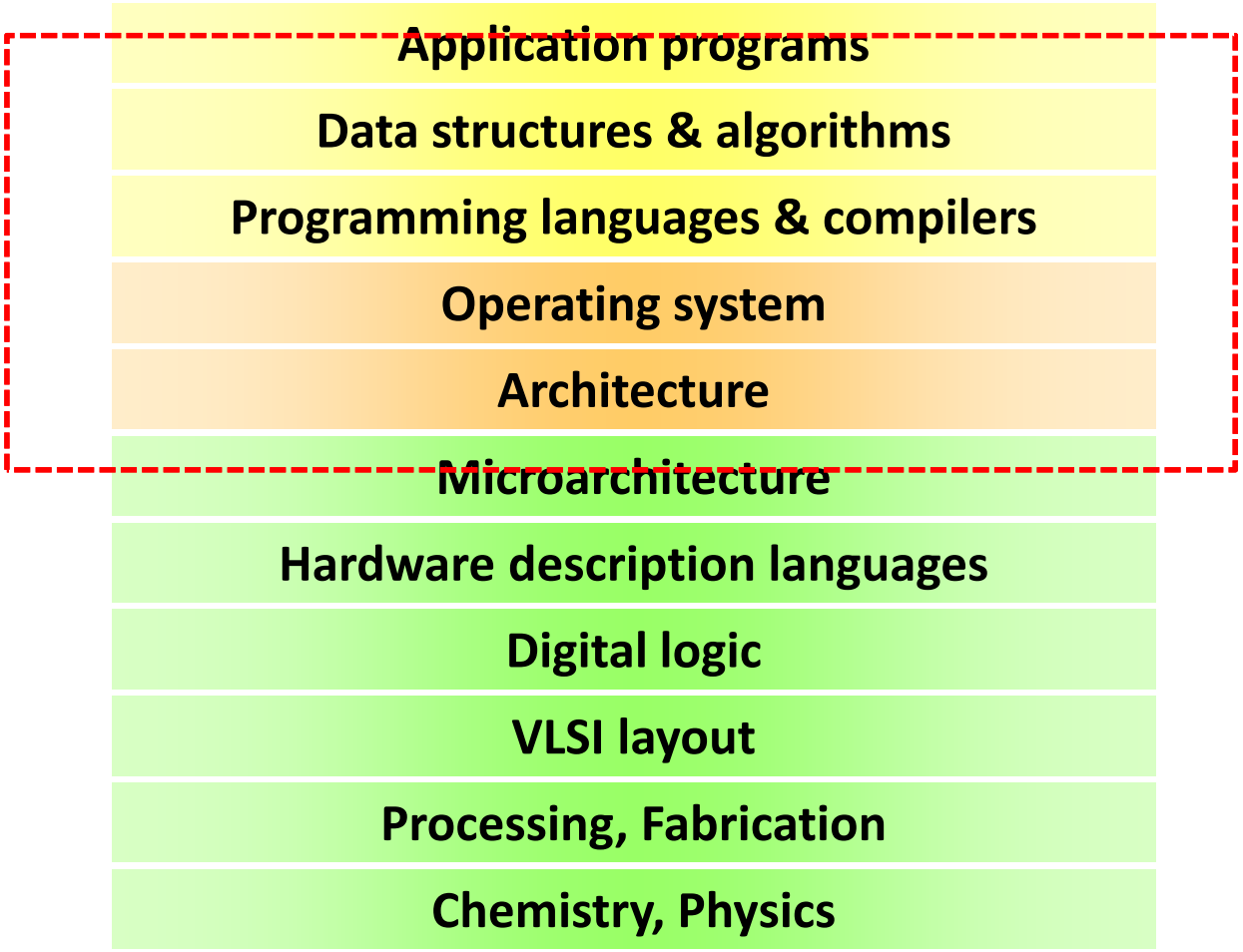
Course Outline (3)

- Computer systems internals



Course Outline (4)

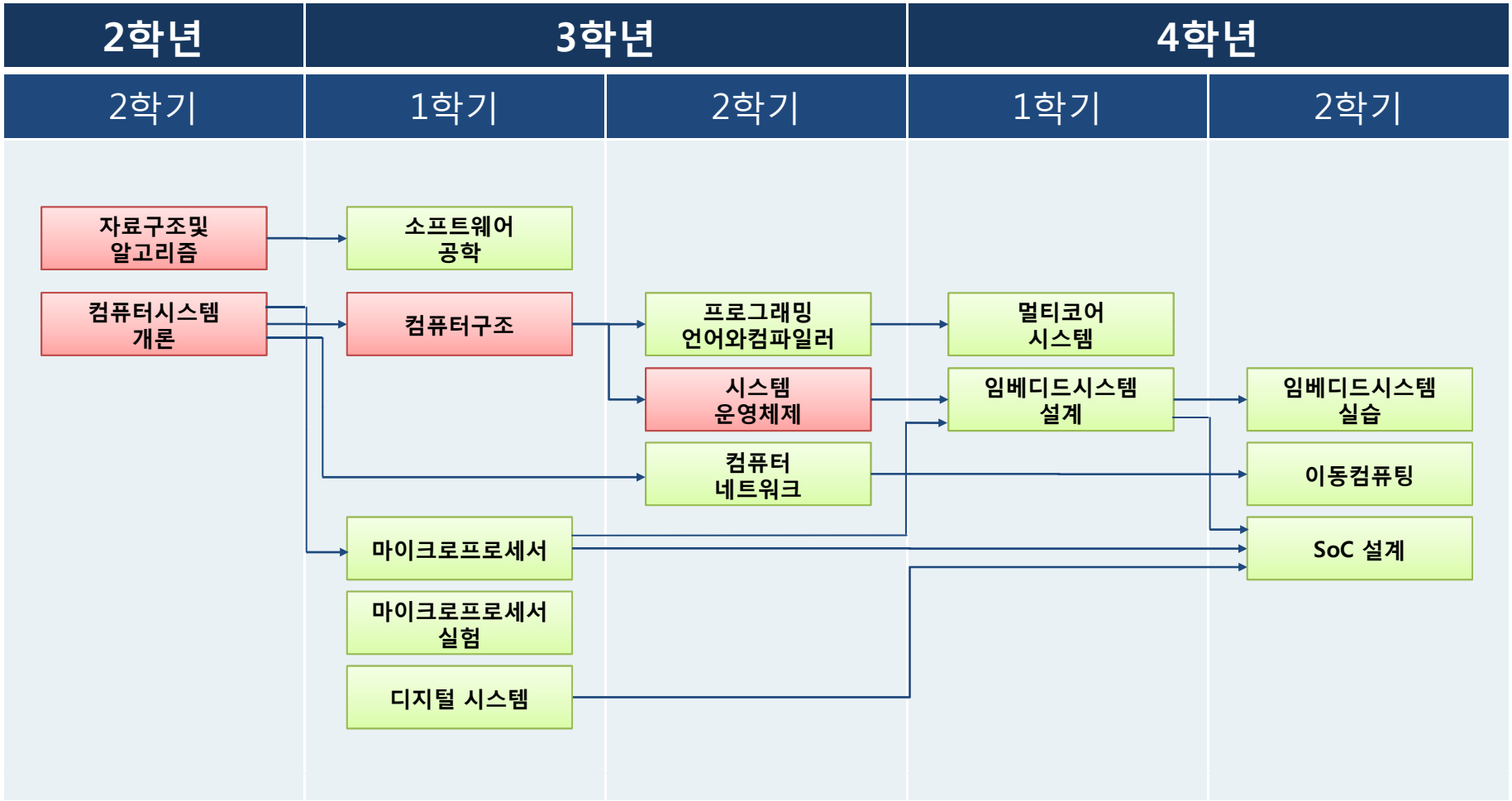
- Levels of abstraction



Course Plan

- **Topics**
  - Digital systems
  - Representing and manipulating information
  - Assembly programming
  - Compilers
  - Linkers and loaders
  - Processor architecture
  - Memory hierarchy
  - Operating systems
  - Performance optimization

System Software Track



Prerequisites

- C programming skills (GEDD07)
- Basic knowledge of UNIX/Linux systems

- ICE2001: Logic circuits
- SSE2029: Data structures and algorithms or ICE2002: Data structures

Course Components

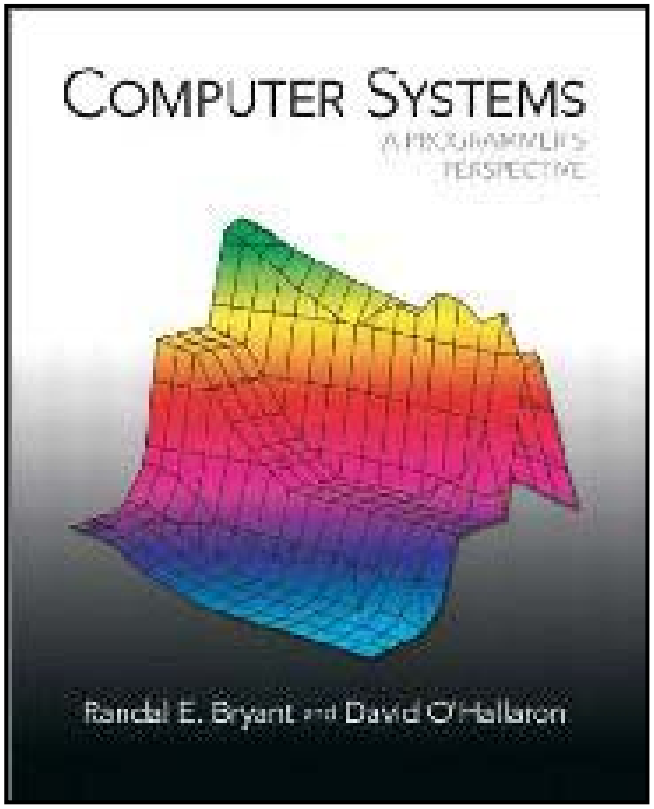
- **Lectures**
  - Concepts
  - Backgrounds
- **Reviews & Quizzes**
  - On topics covered in previous classes
- **Projects**
  - Mostly on assembly programming
  - Design, implementation, measurement, optimization

Textbook

- **Computer Systems:**
  A Programmer's Perspective

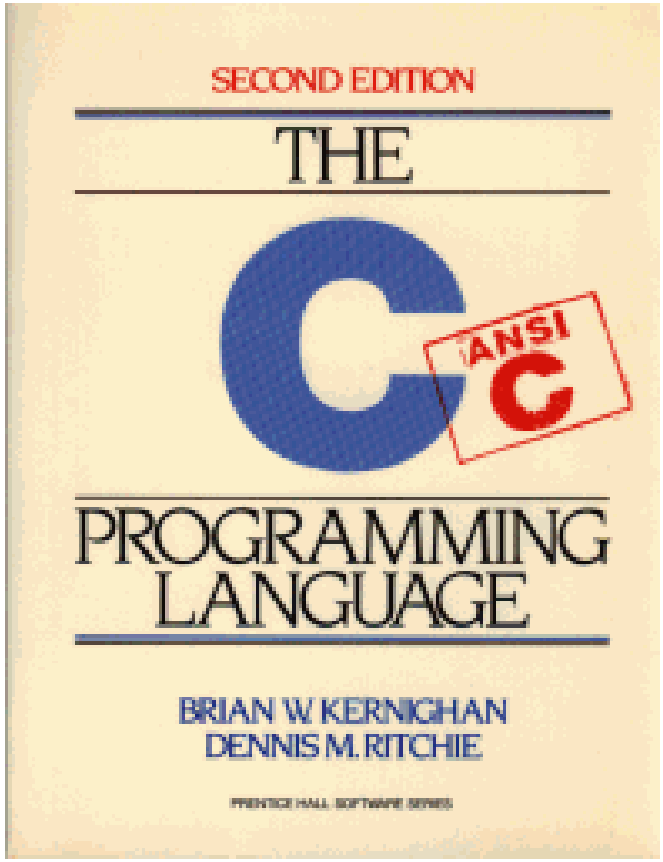
  - Randal E. Bryant and David R. O'Hallaron, Prentice-Hall, 2003.

  - Authors' homepage: http://csapp.cs.cmu.edu



References (1)

- **C Programming**
  - **C Programming Language**, (Second Edition)
    B. Kernighan and D. Ritchie,
    Prentice Hall, 1988.



References (2)

- **Assembly Programming**
  - **The Art of Assembly Language Programming,**
    Randall Hyde,
    http://webster.cs.ucr.edu/

  - Intel Architectures Software Developer's Manual,
    Volume 1: Basic Architecture
    Volume 2: Instruction Set Reference
    Volume 3: System Programming Guide
    http://www.intel.com/products/processor/manuals/index.htm

Class Policies (1)

- **Grading Policy (subject to change)**
  - Class attendance (10%)
  - Projects (45%)
  - Exams, Quizzes (45%)

  - If you miss one or both of exams, you will fail this course.
  - Do not be late! You should be present in the lecture room when I take class attendance.
  - You have four "tokens"; these tokens can be used for unexcused absences and for excused absences as well (i.e., up to four absences will be OK).

Class Policies (2)

- **Project Policy**
  - You will work on each project alone
  - The submission status will be posted on the course homepage.
  - Only the assignments submitted before the deadline will receive full credit.
  - 25% of the credit will be deducted for every single day delay.

Class Policies (3)

- **Cheating Policy**
  - "Copying all or part of another person's work, or using reference material not specifically allowed" are forms of cheating and will not be tolerated
  - For a student involved in an incident of cheating, the following policy will apply:
    - You will get zero points in the particular project and the final grade will be lowered by one grade (e.g., B+ → B)
    - For serious offenses, you will get F and this will be notified to the department chair
  - Share useful information: helping others use systems or tools, helping them with high-level designs or debug their code is NOT cheating!

Any Questions?