KOREA UNIVERSITY
SEJONG CAMPUS

Computer Architecture and Design [AICS221]

Course Introduction & Basic Concepts

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Korea University

AI Cyber Security

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Course Introduction

■Course Information

□ Course name: Computer Architecture and Design (컴퓨터구조설계이론)
□ Completion division: Major Selective
□ Lecture Room: R216, Sci & Tech Bldg. 2
□ Lecture Time: **Mon (2-4) 10:00 ~ 13:00**

■Overview

□ This course covers the structure and operation of core hardware components in a computer system, including the CPU, memory, I/O devices, and control units.
□ It introduces foundational topics such as data representation, digital logic, and instruction sets, and further explores advanced concepts such as pipelining, parallel architectures, and performance analysis.

■Course Activity

■ Lecture	■ Presentation	□ Discussion	□ Experiment	□ Practice
□ Group Activity	□ Individual Activity	□ Group Guidance	■ Quiz	□ Q & A

Course Outlines [1]

Week	Period	Studying Contents	Textbook	Activity
1	09.01-09.05	Course Outline	PDF	Assignment (2~3 times)
2	09.08-09.12	Introduction to Computer Systems Number systems, integer representation	PDF	
3	09.15-09.19	Floating-point, digital/error codes	PDF	
4	09.22-09.26	Logic gates, Boolean algebra	PDF	
5	09.29-10.03	Sequential circuits, FSM	PDF	
6	10.06-10.10	Processor structure, ALU, registers	PDF	
7	10.13-10.17	Instruction formats, addressing modes	PDF	
8	10.20-10.24	Midterm Exam		

Course Outlines [2]

Week	Period	Studying Contents	Textbook	Activity
9	10.27-10.31	Control types, instruction cycle	PDF	Assignment (2~3 times)
10	11.03-11.07	Main memory, cache hierarchy	PDF	
11	11.10-11.14	Virtual memory, SSD, RAID	PDF	
12	11.17-11.21	System bus, I/O interface	PDF	
13	11.24-11.28	Interrupt types, handling methods	PDF	
14	12.01-12.05	Multiprocessing, shared memory	PDF	
15	12.08-12.12	Multicomputers, benchmarking	PDF	
16	12.15-12.19	Final Exam		

Grade/Failure by absence

■Score ratio

□ Midterm exam (30%)

□ Final exam (30%)

- The midterm and final exam results will be kept private.
- (However, you can check it when you inquire personally.)

□ Quiz (30%)

- Assignment (five times)
- Presentation

□ Attendance (10%)

■Rules

□ 3 tardies = 1 absence

□ 6 absent = F grade

General notice

■Attendance and Excused Absence Policy

□ Attendance will be checked through **offline attendance** (via LMS).

□ The number of excused absences for the same reason is limited.

□ Principle: All requests for excused absences must be submitted in advance.

□ Exception: In unavoidable cases, supporting documents must be submitted within 10 days after the reason has ended.

□ Requests for excused absences must be submitted before the end of the semester.

General notice

■No Offline Class (Make-up Lecture Provided Online)

□ The class will be canceled October 6 and November 24.

□ A make-up session will be provided through pre-recorded lecture videos.

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4	09.22-09.26	Logic gates, Boolean algebra	PDF	**Assignment**
5	09.29-10.03	Sequential circuits, FSM	PDF	**(2~3 times)**
6	**10.06-10.10**	**Processor structure, ALU, registers**	**PDF**	
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15	12.08-12.12	Multicomputers, benchmarking	PDF	
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Thank you

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