

Syllabus

Course code	ECE 352	Course name	Computer Organization and Architecture			credits	3
Instructor	Name : Hyocheun Lee			Homepage : https://relacslab.github.io/			
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	Office hour : appointment is recommended						
1. Goals	Similar to skyscrapers, well-architecting a computing system that incorporates bleeding-edge technologies is pressing for achieving higher performance, energy efficiency, and reliability. In this lecture, we will learn the basics of computer architecture, including pipeline designs, brief introductions to modern CPUs and memory management, and some issues related to caches (e.g., policies and coherence).						
2. Textbooks	<p>Main: Patterson and Hennessy, "Computer Organization and Design (MIPS Edition)"</p> <p>Sub: (1) Patterson et al., "Computer Architecture: A Quantitative Approach" (2) Research Papers</p>						
3. Prerequisites	<ul style="list-style-type: none"> ■ Logic Design ■ Digital System Design ■ C/C++ programming skills 						
4. Ratings (%)	Attendance	Homework	Mid-term	Final-term	Project	Others	Overall
	5	0	35	35	25	0	100
5. Agenda	Week	Contents					
	1	Introduction to Computer Architecture					
	2	Instruction Set Architecture (1)					
	3	Instruction Set Architecture (2)					
	4	Single- & Multi-Cycle Microarchitectures					
	5	Pipelined Microarchitecture: Introduction					
	6	Pipelined Microarchitecture: Data Hazard and its Handling					
	7	Pipelined Microarchitecture: Control Hazard and its Handling					
	8	Mid-Term Exam					
	9	Advanced Microarchitecture: Out-of-Order, Superscalar					
	10	Advanced Microarchitecture: Multithreading					
	11	Memory Systems: Cache (1)					
	12	Memory Systems: Cache (2)					
	13	Memory Systems: Virtual Memory					
	14	IO Devices and Managements					
	15	Final-Term Exam					
6. Notes for students	<ul style="list-style-type: none"> ■ F will be given if cheating is caught no matter what case is ■ One grade lower if not taking either mid-term or final-term exam ■ This class has a Verilog project, please refrain from taking this class if you have not taken "Digital System Design" class 						