Syllabus

Course code	ECE 453	Course name	VLSI System Design	credits	3
Instructor	Name : Hyokeun Lee		Homepage : https://relacslab.github.io/		
	E-Mail : hyokeunlee@ajou.ac.kr		Office : 원천관 403		
	Office hour : appointment is recommended				
1. Goals	The integration density of semiconductors has made a dramatic leap forward. In the past, circuits implemented using RLC components at the PCB level have evolved into Very-Large Scale Integrated (VLSI) systems, starting with thousands and now containing over a billion transistors. This course will explore rationale behind various apsects in a VLSI system, starting from the transistor level.				
2. Textbooks	Neil H. E. Weste, "CMOS VLSI Design: A Circuits and Systems Perspective"				
3. Prerequisites	▪ Logic Design ▪ Digital System Design ▪ Electronic Circuit				

4. Ratings (%)	Attendance	Homework	Mid-term	Final-term	Project	Others	Overall
	10	20	35	35	0	0	100

5. Agenda	Week	Contents
	1	Introduction to VLSI/SoC
	2	Manufacturing Process of Chips
	3	MOSFET and CMOS
	4	CMOS Power Analysis
	5	Logical Efforts for Better Delay Design
	6	Combinational Logic
	7	Sequential Logic
	8	Mid-Term Exam
	9	Embedded Processors and Data Parallelism
	10	Accelerators in SoC
	11	Memory Systems (1)
	12	Memory Systems (2)
	13	Interconnection Technology (1)
	14	Interconnection Technology (2)
	15	Final-Term Exam

6. Notes for students	▪ 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