

# Syllabus

Course code	ECE 453	Course name	Computer Organization and Architecture				credits	3
Instructor	Name : Hyokeun Lee					Homepage : <a href="https://relacslab.github.io/">https://relacslab.github.io/</a>		
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	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 the various high-level system architectures that can be configured through these, starting with the lowest level of VLSI system design, including MOSFETs and CMOS.							
2. Textbooks	Neil H. E. Weste, "CMOS VLSI Design: A Circuits and Systems Perspective"							
3. Prerequisites	<ul style="list-style-type: none"><li>▪ Logic Design</li><li>▪ Digital System Design</li><li>▪ Electronic Circuit</li></ul>							
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	<ul style="list-style-type: none"><li>▪ F will be given if cheating is caught no matter what case is</li><li>▪ One grade lower if not taking either mid-term or final-term exam</li></ul>							