

Syllabus [2025Year 1 Term]

Course Information

Course Title	Digital Logic Circuits	Credits	3
Course Code	502320-2	Required/Elective (For Undergraduate Courses)	Selective majors
Department or Major	Semiconductor Convergence Engineering	Language	English
Methods of Teaching		Lecture Room	화7,8,9(2공523)/ 목16,17,18(3공517)
Time Allotment	Lecture(3) Experiments(0) Trainging & Practice(0) Performance(0) Designing & Planning(0)	Cyber Lectures	
Course Type	offline		

Lecturer

Lecturer	Name	Nahm Il Koo	Rank	Assistant Professor	Final Academic Degree	공학박사
	Department & college	Semiconductor Convergence Engineering		Office	College of Engineering – Building 2 413	
	Office Phone Number	031-8005-3615		e-mail	koonahmil@dankook.ac.kr	
	Field of Interest					

Course Summary

Course Description	Establishing the basic concepts of digital systems and gaining an understanding of simple components.
Description Related Courses	
Course Goals	1. Understanding the concepts of digital circuits and logic gates. 2. Understanding the representation of combinational logic circuits using truth tables with N AND, NOR, and NOT gates. 3. Understanding flip-flops and registers.
Projected Results	Able to provide a basic understanding of digital logic circuits and the capability to design them.

Percentage of the original language classes(%)	
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Syllabus

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
1	Digital Systems and Binary Numbers		강의,	
2	Digital Systems and Binary Numbers		강의,	
3	Boolean Algebra and Logic Gates		강의,	
4	Boolean Algebra and Logic Gates		강의,	
5	Gate-Level Minimization		강의,	
6	Combinational Logics		강의,	
7	Combinational Logics		강의,	
8	Mid-Term		강의,	
9	Synchronous Sequential Logic		강의,	
10	Synchronous Sequential Logic		강의,	
11	Register and Counters		강의,	
12	Register and Counters		강의,	
13	Memory and Programmable Logics		강의,	
14	Memory and Programmable Logics		강의,	
15	Final Exam		강의,	

Methods of Grading

sequence	Description	Percentage	Details
1	Mid-term Exam	40%	
2	Final-exam	40%	
3	Pop Quizzes	10%	
4	Assignments	0%	
5	Reports	0%	
6	Presentations & Discussions	0%	
7	Attendance	10%	
All		100%	

sequence	Description	Percentage	Details
8		0%	
9	Others	0%	
All		100%	

Core of Value

핵심가치	전공역량	역량정의	역량구분	값(%)
혁신 (Discovery)	창의적문제해결 (Creative problem-solving)	주어진 상황과 문제를 창의적으로 해결할 수 있는 능력		0%
혁신 (Discovery)	도전 (Challenging)	전공 지식을 새로운 분야와 융합하고 아우를 수 있는 능력		0%
혁신 (Discovery)	지식융합 (Knowledge convergence)	새로운 분야를 개척하거나 도전적으로 임할 수 있는 능력		0%
헌신 (Dedication)	세계시민 (Universal value)	세계 공동체 구성원으로 전공자로서 국제적 이슈에 대응할 수 있는 능력		0%
헌신 (Dedication)	상호협력 (Cooperation)	공동의 목적 달성을 위해 타인과 상호협력할 수 있는 능력		0%
헌신 (Dedication)	공동체 (Sense of community)	공동체의 구성원으로서 필요한 태도와 윤리의식을 가질 수 있는 능력		0%
능동 (self-Determination)	자기주도 (Self-Managing)	주어진 상황과 문제를 주도적이고 능동적으로 해결할 수 있는 능력	부역량	0%
능동 (self-Determination)	지식활용 (Knowledge application)	주어진 상황과 문제에 대해 논리적으로 파악하고 분석할 수 있는 능력	주역량	0%
능동 (self-Determination)	논리적사고 (Logical thinking)	전공관련 지식을 필요에 따라 다양하게 적용하고 활용할 수 있는 능력		0%
능동 (self-Determination)	의사소통 (Articulation)	대화를 통해 다양한 의견을 조율하고 합의를 이끌어 낼 수 있는 능력	부역량	0%

Textbook(s) & References

Descrip tion	Title	Author	Publisher
Requi red T extbo ok	Digital Design with an introduction to the ve rilog HDL, VHDL, and systemverilog	M . Morr is Mano	Pearson

Memo