

Course title	Code	semester	T+U	credit	ECTS
Digital Logic Circuits		3	2 + 2	3	3
Prerequisite Courses	None				
Language of the Course	English				
Course Level	Undergraduate				
Type of Course	Compulsory				
Course Coordinator					
Instructors					
Course Assistants					
The aim of lesson	the basic and theoretical information about digital logic circuits to the level to analyze and design both combinational and sequential circuits.				
Course Content	Numerical systems, binary numbers, base transformations, complements , signed numbers, binary codes. boolean algebra , boolean functions, canonical and standard forms, logic operations and gates. Simplification with the map method, disregarded cases. NAND and NOR applications. Combined logic circuits, adder, decoder, encoder, multiplexer . Programmable logic elements (PAL, PLA). Sequential circuits, flip-flops , registers, counters. memories.				
Course Learning Outcomes	<p>At the end of this course, the student;</p> <ol style="list-style-type: none"> 1. To be able to comprehend the importance of digital systems, real systems and computer architecture. 2. To be able to learn the number systems used in numerical systems. 3. To be able to learn the basic theorems and axioms used in Boolean algebra. 4. To be able to learn the functions of the basic logic gate elements. 5. To be able to learn the ability to design logic functions using logic gate elements. 6. To be able to learn the structure of basic storage elements. Logic operations and gates. Simplification with map method, ignored 				
Weeks	Topics				
one	Introduction: General Properties of Digital Systems; Number Systems, Operations with Binary Numbers				
2	of Boolean Algebra; Logic Functions, Canonical and Standard Formats				
3	Reduction of Logic Functions. Finding Prime Products with Karnaugh Diagrams.				
4	Cost Calculation, Optimum Function and Circuit Finding				
5	Logic Conjunctions.				
6	Prime Products by the Table (Quine-Mccluskey) Method.				
7	Prime Products by the Table (Quine-Mccluskey) Method.				
8	Finding Necessary and Sufficient Contents.				
9	Medium Size ICs "MSI" (Adder, Data Selector).				
10	Combinational Circuit Design Using These Elements .				
11th	Decoders , Programmable Logic Elements (PAL,PLA).				
12	Combinational Circuit Design Using These Elements .				
13	Holders and ' Flip-Flops'				
14	Analysis of Simultaneous Sequence Circuits				
General Competencies					
To be able to classify and solve digital logic circuits.					
Kaynaklar					
<p>Floyd, T. L., (2006). Digital Fundamentals, Pearson Prentice Hall. John F. Wakerly, "Digital Design Principles & Practices", 4th edition updated, Prentice Hall, 2005. Mano, M. & Ciletti , DM, (2007). Digital Design, 4th edition , Prentice hall .</p>					

Evaluation System

The dates, days and hours of the Midterm Exam, Quiz, Final Exam and Evaluations will be announced later, according to the decision of the Faculty Administrative Board.

	WITH PROGRAM LEARNING OUTCOMES COURSE LEARNING OUTCOMES RELATIONSHIP TABLE										
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PC11
INCREASE1	5	5	5	5	4	4	4	5	5	4	4
INCREASE2	5	4	4	4	4	3	3	3	5	4	5
INCREASE3	5	5	5	4	4	4	4	4	4	4	4
ÖK4	4	4	5	5	5	4	3	3	3	3	3
ÖK5	4	4	3	3	3	5	5	5	5	3	5
ÖK6	5	5	5	5	5	5	4	5	5	4	5
LO: Learning Outcomes OP: Program Outcomes											
Contribution Level	1 Very Low		2 Low		3 Medium		4 High		5 Very High		

Relation of Program Outcomes and Related Course

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Digital Logic Circuits	5	5	5	4	4	4	4	4	5	4	4

