Introduction to Digital Logic

Prof. Nizamettin AYDIN
naydin@yildiz.edu.tr
naydin@ieee.org

Course Details

• Course Code: 0112611
• Course Name: Introduction to Digital Logic (Lojik Devreler)
• Instructor: Nizamettin AYDIN

Assessment

• Midterm 1: 20%
• Midterm 2: 20%
• Homework: 20%
• Final: 40%

Course Outline

1. Digital Computers, Number Systems, Arithmetic Operations, Decimal, Alphanumeric, and Gray Codes
2. Binary Logic, Gates, Boolean Algebra, Standard Forms
3. Circuit Optimization, Two-Level Optimization, Map Manipulation, Multi-Level Circuit Optimization
4. Additional Gates and Circuits, Other Gate Types, Exclusive-OR Operator and Gates, High-Impedance Outputs
5. Programmable Implementation Technologies: Read-Only Memories, Programmable Logic Arrays, Programmable Array Logic, Technology mapping to programmable logic devices
6. Combinational Functions and Circuits
7. Sequential Circuits, Sequential Circuit Analysis
8. Counters, Register Cells, Buses, & Serial Operations
9. Sequencing and Control, Datapath and Control, Algorithmic State Machines (ASM)
10. Memory Basics

Recommended books

Main course book:
Logic and Computer Design Fundamentals
By M. Mano, Charles Kime.
Published by Prentice Hall.
Edition: 4th.
Isbn: 013198926X