EE302 Digital Integrated Circuits
Spring 2021-2022

Email: melikyazici@sabanciuniv.edu  Place: M FMAN L018 & F FMAN G060

Zoom: https://sabanciuniv.zoom.us/j/8083097056

Office Hours: On Monday at 13.40 - 14.30 or by appointment.

Assistants: Enes Recep Turkoglu and Nezih Kaan Veziroglu

Main References:

Objectives:
• To develop the engineering skills to analyze and design CMOS Digital ICs.
• To introduce basic CMOS process technology to understand the structure, operational principles and circuit parameters of transistors used in digital design.
• To provide each student with the opportunity for completing a set of design projects that lead to the development of a small digital standard cell library.

Prerequisite: EE202 Electronics Circuits II

Tentative Course Outline:
• CMOS Technology Overview
• VLSI Design Flow and Standard Cell Implementation
• Inverter and Interconnects
• Combinational Logic Gates
• Designing Sequential Logic Circuits
• Dynamic Logic Circuits
• Semiconductor Memories
• Low Power Design
• I/O Circuits

Grading Policy: HW and quizzes (10%), Labs (30%), Midterms (30%), and Final (30%).

Important Dates:
Midterm #1 .......................... April 15, 2022
Midterm #2 .......................... May 27, 2022
Final Exam ........................... TBA by the University

Labs: Implementation of standard cell designs using Cadence Virtuoso (Inverter, NOR, NAND, Flip Flops and SRAM).

Quizzes: There will be pop-up quizzes to encourage participation.

Class Policy: Regular attendance is essential and expected.