Textbook:
2. Lecture Notes

Prerequisites: EEL3712 and EEL3712L

Grading: Attendance and class Participation (15%) + Homework (10%) + Midterm (30%) + Final (45%)

Course Description and Coverage: This course thoroughly investigates the fundamentals in design and analysis of MOS integrated circuits. The topics to be covered include:
1. MOS transistor.
2. Modeling of MOS transistor using SPICE.
3. Static characteristics of MOS circuits.
4. Dynamic characteristics of MOS circuits.
5. Combinational MOS logic circuits.
6. Sequential MOS logic circuits.
7. Dynamic logic circuits.
8. Semiconductor memories (optional)
9. Low-power CMOS logic circuit design (optional)
10. BiCMOS logic circuits (optional)

Course Objectives:
Upon completing this course students will learn:
1. Basic principle of MOS transistor
2. MOS transistor simulation using SPICE
3. Static and switching characteristics of MOS circuits
4. Design and analysis of CMOS logic circuits
5. Design and analysis of dynamic logic circuits
6. Advanced topics in digital electronics and VLSI design
Attendance:
Attendance is mandatory. Up to ten percentage points will be deducted from the final grade for repeated non-excused absences.

Canvas Usage:
All lecture notes and homework assignments will be posted in FIU Canvas.

Homework:
Totally there will be about 4-5 assignments. Homework can be turned in during class on the due date (Turning in earlier is fine). No late homework will be accepted.

Wireless Device Policy:
Usage of disruptive wireless devices such as cell phones or pagers in classroom is prohibited.


Week 1:  08/26 (Ch. 3, Ch. 4)
Week 2:  09/02 (Ch. 4)
Week 3:  09/09 (Ch.5)
Week 4:  09/16 (Ch. 6)
Week 5:  09/23 (Ch. 6, Ch. 7)
Week 6:  09/30 (Ch. 7, Ch. 8)
Week 7:  10/07 (Ch. 8, Ch. 9)
Week 8:  10/14 (Ch. 9, Ch. 10)
Week 9:  10/21 (Ch. 10, Ch. 11)
Week 10:  10/28 (Midterm)
Week 11:  11/04 (Ch.11-12)
Week 12:  11/11 (Ch.12-13)
Week 13:  11/18 (Ch. 14-15)
Week 14:  11/25 (No Class. Thanksgiving Holiday)
Week 15:  12/02 (flexible)
Final exam: 12/09/2021 (2:15PM - 4:15PM)