Instructor: Joseph JaJa, 3433 A.V. Williams Bldg; 301-405-1925, josephj@umd.edu

Course Objectives: Students are supposed to learn the basic techniques and methodologies for designing and analyzing digital systems and how to apply these techniques to build specific circuits. Core topics covered include number systems, Boolean Algebra, combinational circuits, programmable logic devices and read-only memories, flip-flops and memory devices, sequential circuits, and various related optimization techniques.


Core Topics:

1. Binary Numbers, Binary Arithmetic, and codes (Sections 1.2 – 1.7)
2. Boolean Algebra, Logic Gates, and Combinational Networks (Sections 1.8 – 1.9, 2.1 – 2.9)
3. Simplification of Boolean Expressions, Karnaugh Maps, NAND and NOR Gates (Sections 3.1 – 3.8)
4. Combinational Logic and Basic MSI Building Blocks (Sections 4.1 – 4.11)
5. Latches, Flip-flops. And Sequential Circuits (Sections 5.1 – 5.5)
6. Registers and Counters (Sections 6.1 - 6.5)
7. Memory, Programmable Logic, ROMs, PLDs, PLAs, and PALs (Sections 7.1 – 7.8)
8. Optional topics from Chapters 8 and 9 as time permits

Midterm I: Thursday, February 25; Midterm II: Thursday, March 31; Final: TBA – all in JMP1202.

No exam make-up will be given except for serious documented illness.

Homework and Quizzes: Weekly (no late homework will be accepted but the homework with the lowest score will be dropped).

Course Grade: Homework and Quizzes (10%), Midterms (56%), Final (34%).

Office Hours: Tu, Th 3:30-5, or by appointment

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit http://www.studenthonorcouncil.umd.edu/whatis.html.