EL519: Low Power VLSI

Lectures: Every Tue 1100-1150, Thu, 0900-0950, CEP 103
Labs: TBD 1600-1800, Lab 205

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Course Description: The motivation for the course is to emphasize more on the practical aspect of Low Power and Ultra Low Power VLSI design by using the concepts already taught in previous VLSI courses.

Prerequisite(s): EL322, EL511.

Credit Hours: 2-0-2-3

Distribution:
Coursework – 100%.

Grade Distribution:
Assignment 1 (Adder Analysis) 20%
Assignment 2 (Multiplier Analysis) 20%
Assignment 3 (DSP Module Design) 40%
Assignment 4 (Review) 20%

Grading:
Course Objectives:
At the completion of this course, students will be able to:

1. the student will be able to design and implement CMOS digital circuits and optimize them with respect to size (area), speed and power dissipation.

Knowledge and Understanding:
Having successfully completed the module, you will be able to demonstrate knowledge and understanding of:

1. Introduction to Cadence, Schematic Design, Analogue Layout and Simulation, Extraction and LVS
2. Digital Simulation and RTL Synthesis
3. Automatic Place and Route, Pad Rings And Chip Architecture
4. Low Power System Architecture

Intellectual Skills:
Having successfully completed the module, you will be able to:
1. Advanced IC Design Skills
2. Use of EDA Tools
3. Understanding of Analog Simulation
4. Understanding of Digital Simulation
5. Place and Routing
6. Power Reduction techniques at Circuit, Architectural and System level

**Extra Help:** Do not hesitate to come to my office during office hours or by appointment to discuss a homework problem or any aspect of the course.

**Attendance Policy:** Attendance is mandatory unless the student has compelling reasons not to attend - in which case come and see me. Students are responsible for all missed work, regardless of the reason for absence. It is also the absentee’s responsibility to get all missing notes or materials.

**Important Dates:**

- Assign 1 Assignment Given/ Handin Date ............. Aug 04/Aug 21
- Assign 2 Assignment Given/ Handin Date ............. Aug 20/Sep 11
- Assign 3 Assignment Given/ Handin Date ............. Sep 10/Nov 05
- Assign 4 Assignment Given/ Handin Date ............. Aug 13/Oct 16