

EE477L – MOS VLSI Circuit Design
Nazarian Fall 2013
University of Southern California
Ming Hsieh Department of Electrical Engineering

Course Description

This course provides an introduction to analysis and design of digital MOS VLSI circuits including area, delay and power minimization. The course explores the design aspects involved in the realization of CMOS integrated circuits from device up to the register level. The course includes the study of the MOS devices, logic cells, and critical interconnect and cell characteristics that determine the performance of VLSI circuits. Students will use CAD tools to develop efficient circuit layouts and verify designs. Laboratory assignments include design, layout, extraction, and simulation.

Website

DEN: <http://den.usc.edu/>

Main Textbook

- CMOS Digital Integrated Circuits, S.M. Kang, Y. Leblebici, Mc Graw Hill, 3rd ed., 2003.

Additional Readings

- *CMOS VLSI Design: A Circuits and Systems Perspective*, N. Weste and D. Harris, Addison-Wesley, 4th edition, 2011.
- *Analysis and Design of Digital Integrated Circuits*, , David A. Hodges, Horace G. Jackson, and Resve A. Saleh, McGraw-Hill, 3rd edition 2004
- *Digital Integrated Circuits: A Design Perspective*, J. Rabaey, Prentice Hall, 2nd edition, 2003.
- *Modern VLSI Design: System-On-Chip Design*, W. Wolf, Prentice Hall, 3rd edition, 2002.
- *CMOS IC Layout: Concepts, Methodologies and Tools*, D. Clein, 2000.

Prerequisite

No prerequisite for graduate students. EE 328Lx or EE 338 for undergrads.

Instructor

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Teaching Assistants

TBA

Graders

TBA

Updated course information will be posted on the course website.