

ECE 424 Digital VLSI Design

Overview

Course Catalog Description: CMOS logic gates and circuits, transistor implementations, applications to sequential circuits, VLSI data path and controller design, VLSI routing issues and architectures, RTL and VLSI impacts, and applications to microprocessor design.

Prerequisites: C – or better in 322 and 338

Textbook: J. M. Rabaey, A. Chandrakasan and B. Nikolic, *Digital Integrated Circuits: A Design Perspective*, 2nd edition, Prentice Hall, New York, NY, 2003.

Class Goals: This course is intended to be an introduction to the design of very large scale integration (VLSI) circuits. Advanced topics includes: IC technology, CAD tools, layout, design rules, CMOS circuit characterization and performance estimation, standard cells and full custom designs, architectures for VLSI, timing, and testability. This is a project-oriented course. The main objective of this course is to provide the student with the capability of designing VLSI circuits.

Course Coordinator: Prof. Payman Zarkesh-Ha

