CSE 144 (Section Id: 338958)
Computer-Aided Design of VLSI Circuits

Professor Alex Orailoğlu
4840 *AP&M′*
Tel: 619-534-0914 Fax: 619-534-7029
email: alex@cs.ucsd.edu

VLSI circuits are becoming increasingly common due to their ease of manufacture, low cost, and simplified design methodologies. Digital electronic design is taught widely and is accessible to people with scientific background. As the complexity of these electronic circuits increases, the need to use computers for their design becomes more important. Although computer-aided design systems have existed for quite some time, many of them are inadequate for current tasks, and a continuous flow of new tools is being developed. These tools perform more and more of the detailed and repetitive work involved in VLSI System Design, thus reducing the time it takes to produce a chip.

The need for better VLSI design systems has fostered a need to study these systems more carefully. CSE144 is an upper-division course for computer science and electrical engineering majors at UCSD, concentrating on teaching the fundamentals of Computer-Aided Design tools for VLSI. In the course, a general introduction to design automation is followed, by a study of:

- *Partitioning*
- *Placement*
- *Grid Routing*
- *Channel Routing*
- *Silicon Compilation*

The course concentrates on teaching technology-independent principles and concepts. *VLSI Physical Design Automation* by S.M. Sait and H. Youssef is the course textbook. The course will meet twice a week on Tuesdays and Thursdays at 3:55 to 5:15 PM. Completion of either CSE140(L) or completion of CSE143 is an acceptable *prerequisite* for the course.