

Course Announcement

UNL Department of Computer Science and Engineering

CSCE 990: Advanced VLSI Design, Spring, 2011

2:00-3:15 PM, Tu & Th, Avery 118

Course website: www.cse.unl.edu/~seth/990s11/. Check the website for further information about the course, as it becomes available. In particular, I will be linking bibliographic sources that will be useful in the course at the course website.

Instructor: Sharad Seth, Avery 359, seth@cse.unl.edu, 472-5003.

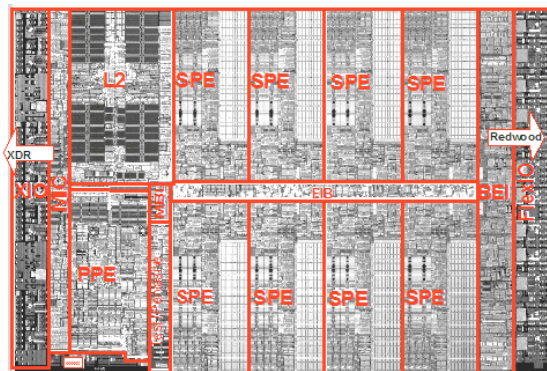
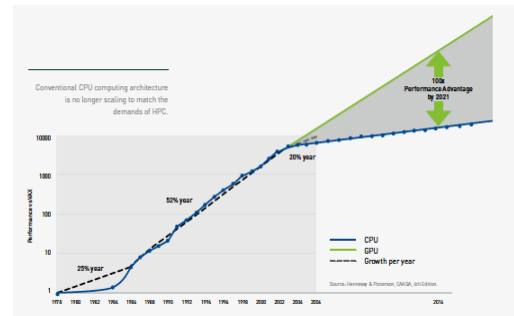
For further information, feel free to contact me by any means that is most convenient to you.

This course is intended for graduate students in computer engineering and electrical engineering, to provide a state-of-the-art introduction to the most relevant topics in VLSI design for the short and medium term. These include but are not limited to: high-performance digital systems with the primary focus on multi-core and many-core processors, memories and interconnect; low-power analysis and synthesis at all levels of design abstraction; and design imperatives of emerging technologies, such as 3D VLSI and the nano-technology.

A introductory course in VLSI design (e.g. CSCE 434/834 or EE 470/870) would be a sufficient prerequisite for this course. However, students with a strong interest in computer architecture, micro-architecture, or embedded system and a background in digital design and introductory circuit theory should be well prepared for the course.



I will follow the format of a seminar course, where much of what you learn in the course is determined by your own initiative. For each major topic that we will cover, you will be expected to come prepared for in-depth discussion in the class by *reading the assigned material*. You will also be expected to *complete a substantial project* focused on a design problem that explores the state of the art in an area of your choice. The exact nature of the exploration, however, might vary from one project to another and might span one or more of the following: synthesis at the architecture or circuit levels, design verification or validation, power,



timing, reliability, or design automation issues. The success of your project grade will be judged on the extent to which you have *explored the background material*, the *novelty of your solution*, and the *quality of your written report*. You can expect to make an *oral presentation on the topic of your project* during the semester and another one *reporting on your project* at the end.