Introduction

Design and Design Automation in the Undergraduate Curriculum
Why Design?

- Make Principles Concrete
- Reinforce Lecture Material
- Integrate Isolated Lecture Topics
- Enhance Students’ “Marketability”
Integrating Design

- In Hardware, Simulation is Essential
- Some Re-Orientation of Course Material is Required
- In Some Cases, Investment in Design Automation Software is Required
- Some New Courses Should be Offered
Essential Areas in Hardware

- Logic Design
- Computer Architecture
- Digital System Design
- FPGA Design
- CMOS Design
- PCB Design
- Design Automation
Why Design Automation?
Because ...

- Design Automation is the Engineer’s “Tools of the Trade”
- Design Automation is a Mature Area with Many Well-Defined Principles
- Design Automation is a Fruitful Area for Computer Scientists
- Can Open New Doors for Computer Science Graduates
Relationships

Design Automation

Existing Computer Science Courses

New Courses
The Rest of the Week

Today
- How to put together a DA Course
- Introduction to Design Automation
- Fun with FHDL

Tuesday
- Intro to Visual Basic Programming
- Fun with Visual Basic
- Logic Design and Computer Architecture
- Laboratory Exercises
The Rest of the Rest

✦ **Wednesday**
  – How to Design an FPGA Course
  – Digital Design Using FPGAs
  – XILINX Tools & Practice I
  – XILINX Tools & Practice II

✦ **Thursday**
  – XILINX Tools & Practice III
  – How to put together a CMOS VLSI Course
  – Introduction to Design Tools
  – Lab with Tools
Break Time!