Overview

- Digital Technology
- Information Sources
- Course Description
- Course Conduct
- Course Outline
- Course Role

Complexity Growth

Source (Copp, Int. AOC EW Conf., 2002)

Information Sources

- Course homepage
  - http://www.engr.wisc.edu/ece/courses/ece352.html
  - http://courses.engr.wisc.edu/ecow/get/ece/352/1saluja/
  - Important source for new and updated information
- E-mail – important critical information
  - Lectures and course in general – Saluja and Ramanathan
  - Mentor and Project - TAs
- Course Description
- Course Conduct
- Course Outline

Reliability and Cost

- Reliability
  - VLSI circuits are more reliable than ever—How do we continue on this path?
- Cost
  - Products are more affordable as cost of digital products is dropping
    - 2 MB flash memory ($2800.00, 1988)
    - 256 MB flash memory ( $55.00, 2003)
  - Must continue to contain the cost

Digital Technology

Complexity Growth

Source (Copp, Int. AOC EW Conf., 2002)
**Course Description**

- **Times & Places**
  - Shared discussions
  - Shared office hours
  - Courses will be almost in sync.

- **Instructors**
  - Professors Saluja and Ramanathan

- **TAs:**
  - Robert Kenney
  - Gregg Albin

- **Prerequisite**
  - Mathematical maturity and just need to know a bit of programming in procedural languages

**Course Description (Continued)**

- **Textbook**
  - must be 2nd Edition or 2nd Edition Updated

- **Computer Usage**
  - Unix workstations at CAE
    - CAE offers Unix tutorials during the first four weeks

- **Homework**
  - Not submitted, not graded (but essential for quiz/final exam prep!)

- **Grading**
  - 4 quizzes: 60%;
  - 2 Projects 20%;
  - Final 20%

**Course Conduct**

- **Critical info for doing well in course – Be familiar with it!**

- **Lectures**
  - Don’t depend on what is on website – may be incomplete

- **Computer-Aided Engineering (CAE)**
  - Unix introductory tutorials from CAE
  - Mandatory Tutorials from 352 TAs – sign-up

- **Project**
  - Individual and teams of two
  - Project Help Sessions – sign-up
  - Submitted and graded

**Course Conduct (Continued)**

- **Quizzes and Final Exam**
  - Note rules – makeup permission will not be given freely!
  - Note final date – attendance on that date required!

- **Discussions**
  - Attend review sessions held weekly and before the quizzes

- **Consultation**
  - Office Hours
    - Use TAs
    - All TA office hours in 3610 Engineering Hall

**Course Conduct (Continued)**

- **E-mail**
  - Technical questions regarding Mentor and projects, e-mail 352@cae.wisc.edu
  - Administrative questions or other questions, e-mail Saluja.

- **Resources for Special Help**
  - McBurney Center – alternative testing or other arrangements
  - Course problem consultation: Hu/Saluja (your instructor)
  - Broader problem consultation: advisor (Saluja) or counselor

- **Academic Misconduct**
  - We really don’t expect it to happen. Please don’t disappoint us.

**Course Outline**

- Some additional lectures may be cancelled
  - Our scheduled lectures are over the required 4x50 minutes for the semester

- Notes contain important information
  - Reading assignments and homework timing
  - Tutorial weeks
  - Project help sessions weeks
  - Quiz times and final exam time!
Course Outline (Continued)
• Major topics in Course
  – Information representation and manipulation
  – Logic elements and Boolean algebra
  – Combinational Logic
  – Arithmetic Logic
  – Sequential Logic
  – Memory and Programmable Logic
  – Register Transfers
  – Control
  – A simple computer organization, design and operation

Course Role
• General – Deals with the design of digital systems and computer hardware
• Links to Other Courses
  § Comp Sci Students – Connects to Comp Sci 354 and can be followed by Comp Sci 552
  § CMPE Students – Connects to ECE 354 and is followed by many courses including required ECE 351, ECE 353, ECE 551 and ECE 552 – The most important fundamental course in hardware in your program!
  § EE Students – One of the several fundamental courses in your program – required for some labs and elective courses

Motivation
• See the “Course Role”
• Help in completing your degree requirement
• Fundamental to learning about computer hardware function at most commonly used level of abstraction