# PRE-MIDTERM REVIEW

Course Workload

- **5** unit course
- Upper division
- New ways of thinking of things requires effort
  - Algebra: use variables
  - Calculus: no concrete solutions for indefinite integrals
  - Digital Design (EEC 180)
    - HDL—a new way of writing "code"
    - Autonomous hardware: datapaths, memory, control
    - Sophisticated controllers
- Passing this course requires significant time and effort

Course Plan: Tools and Methodologies for Large-Scale Digital Designs

- Introduction
- The Verilog hardware description language (HDL)
- Digital arithmetic
  - Number formats
  - Addition / Subtraction
  - Later in quarter: Multiplication, saturation, and rounding
- Flip-Flops
- Control circuits: counters and general FSMs
- Clocks
- Interface circuits
- Memories

Memory		
Flip flops	Control	Clocks
Digital arithmetic		
Verilog		
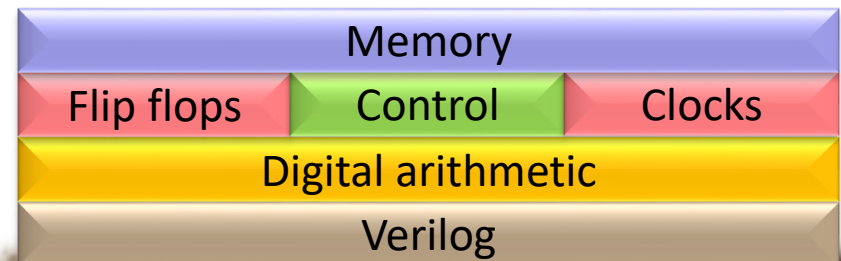
Book + Lectures + Handouts + Laboratory

- The main body of material is presented in the book, lectures, and handouts
- Generally speaking, the labs *complement* the main material
  - They go into a much greater depth on specific topics
  - They give design experience
  - They give significant practical application of theory
- The Quizzes, Midterm, and Final Exam generally focus on the main body of material
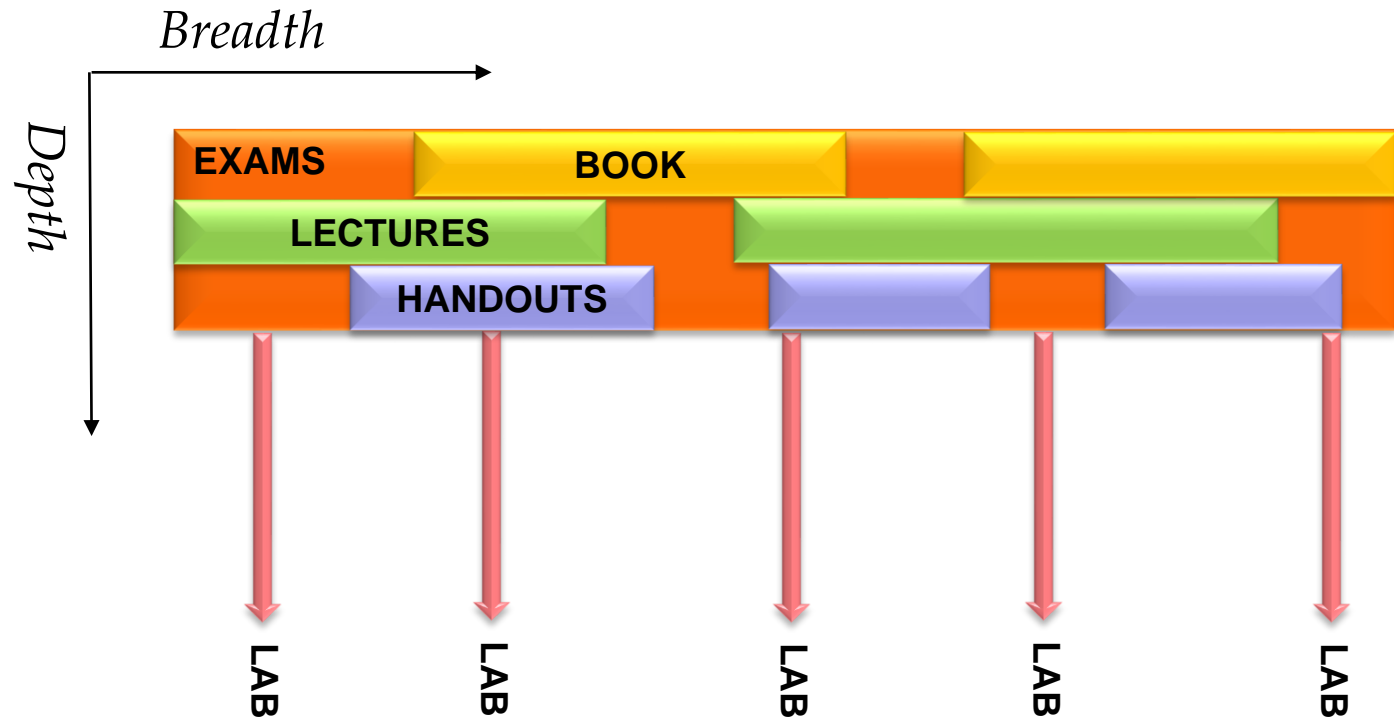
Quizzes and Exams
Notes from the course web page

- "Quizzes, the midterm, and the final exam will cover material from:
  - Lectures,
  - Assigned readings (including handouts),
  - Labs, and
  - Homeworks.
- Some material may be present in only one of these sources"

Book + Lectures + Handouts + Laboratory

- Breadth and Depth

Handouts

- The handouts are copies of most of my lecture notes
- The material in the Handouts posted on the course web page includes some of the most foundational material
- There is a **pretty high expectation** that you understand this material and are proficient in applying it
- When the handouts or lectures and the textbook disagree on something, follow the handouts and lectures