U. Wisconsin CS/ECE 552
Introduction to Computer Architecture

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Welcome to 552
Today

- Course overview and logistics
  - Syllabus
  - Course structure

- Introduction to Computer Architecture
In this course you will learn how exactly a computer works!
Syllabus

• Language of the computer: ISA
• Arithmetic
• Processor Design
• Performance
• Memory
• IO
• Multiprocessors
Course Structure

• Lecture notes
  – Blackboard and slides
  – Readings from text BEFORE class

• Project
  – Describe a full processor, verify, and simulate it
  – Using a hardware description language called Verilog
  – Optionally map to real hardware

• Homework

• Two exams
The optional highly speculative part!
Course Structure

• Lectures
  – Principles and Mechanisms

• Project:
  – Extensive use of design tools
  – Apply the principles and mechanisms to build a processor
Homework

• Homework 0: Introduce yourself
• Homework 1: Logic Design review
• Homework 2: Advanced Logic Design
• Homework 3: Intro to Verilog
• Homework 4: Advanced Verilog
• Homework 5: Intro to project
• Homework 6: Miscellaneous

• One every two weeks
Grading

- 20% Homework
- 25% Project
- 25% Midterm
- 25% Final
- 5% Class participation

- Grades on Learn@UW
Online

- **Web**
  - http://www.cs.wisc.edu/~karu/courses/cs552
  - Course login and password
  - Course calendar, homework, lecture notes, and reference texts online
- **Piazza for discussion:**
  - TAs and I will look at it
- **Email**
  - Include 552 in subject of emails to me
  - Use Piazza if you think its of wide interest
Other

• Come to class on time
• Submit homework on time
• Extensive office hours and feel free to drop in any time my office door is open
• Introduce our TA
This is NOT an easy class
What your Forebears said...

- I am impressed with amount of material covered, learn useful stuff
- Assignments very long and hard, but very useful
- Text was very thorough and helpful
- He got the students involved in everything
- Karu is an awesome professor, material is very interesting, just too much damn work

Instructor was a good teacher
This is NOT an easy class
You will learn a lot – and will take a lot of time.