ENGR3410
Computer Architecture

Mark Sheldon
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Contact

- `http://ca.olin.edu`

- `ca@lists.olin.edu` (For discussion)

- MH363 (Office hrs tentatively TTh 1--2:30)

- No phone. Maybe x2517.

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- Additional faculty: Alex Morrow
- CAs: Ann Wu and Lorraine Weis

Who are *you?*

Course Objectives

- Big ideas of course

- Learn about hardware/software interface

- Learn digital logic

- Build a processor

- Write assembly language programs for it

- Build a complex digital system in an HDL[*]

- Learn about something *you're* interested in[†]

[*] Hardware Description Language — Verilog
[†] FPGAs, DSPs, GPUs, multi-core CPUs, parallel computing, etc.

Requirements

- No final

- Maybe a midterm

- One (team) project

- Solo homeworks (usually pencil and paper)

- Machine problems/labs in pairs

Policies

- For homework, give credit for advice/collaborations per problem

- Lateness:

    - -10% 0-24 hours

    - -25% 24-48 hours

    - -50% 48-72 hours

- Laptops closed and off during class

Textbook(s)

- Required: Patterson & Hennessy. *Computer Organization and Design.* Fourth Edition.

- Recommended: Samir Palnitkar. *Verilog HDL: A Guide to Digital Design and Synthesis.*
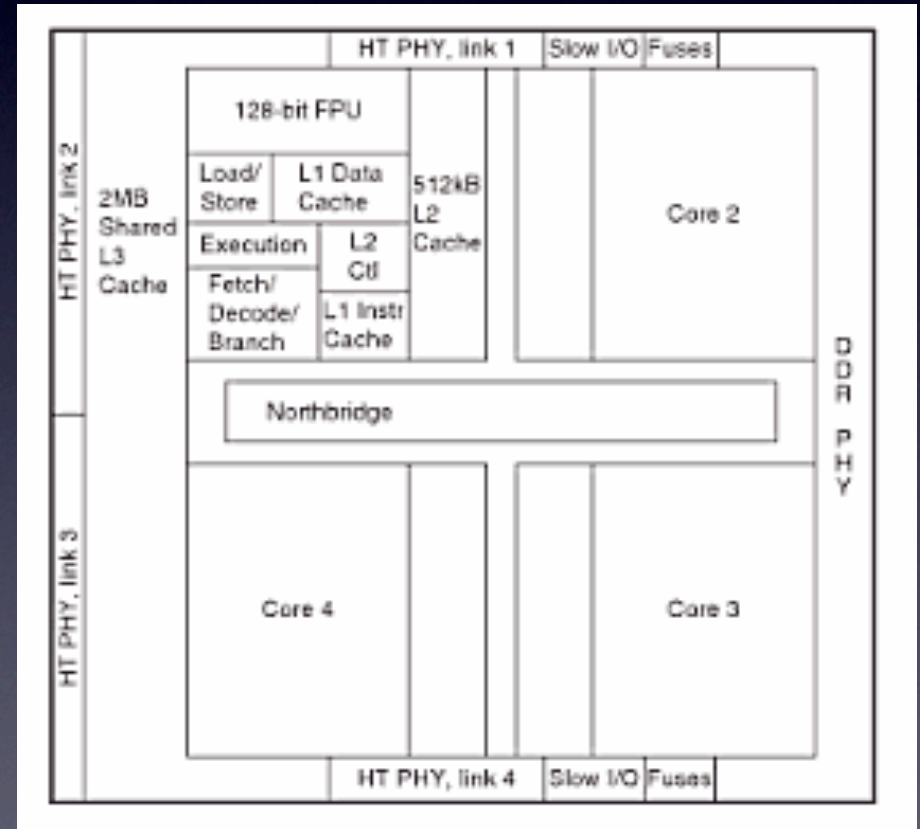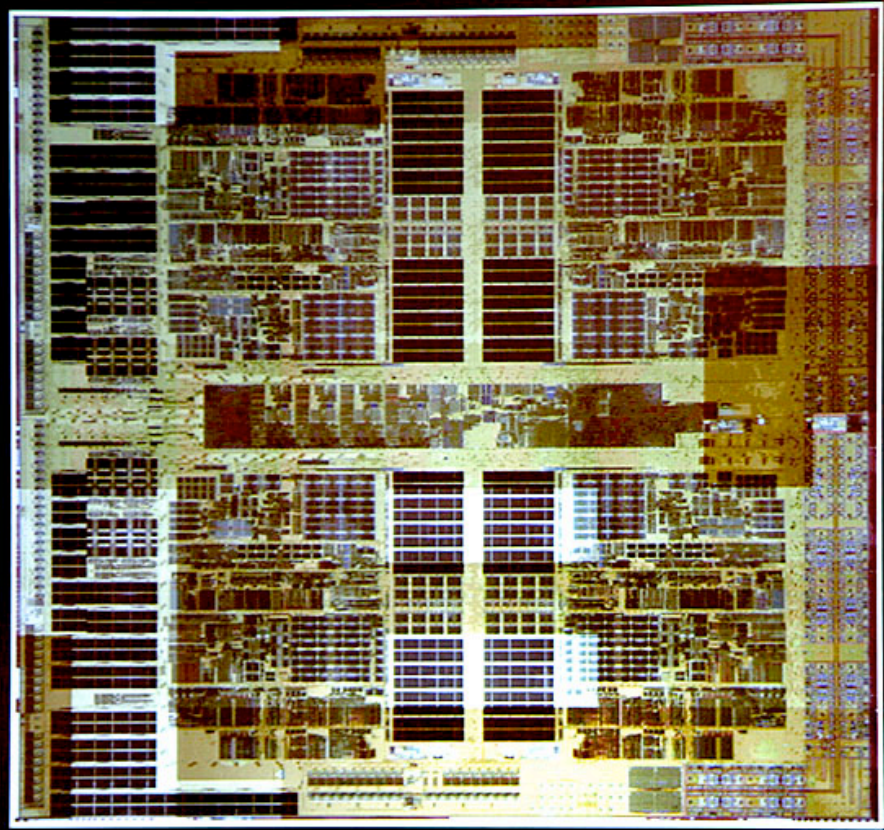
Homework 0
(done after class)

1. Why are you taking this class?

2. What is Computer Architecture? (Cite)

3. What do you look for when buying a computer?

4. What is your favorite processor and why?

5. Name at least 3 things you want to learn in this class. Be semi-specific.

Computer Components

- CPU (aka processor)

- Memory

- Input

- Output

AMD Barcelona

Fun

- Examine stuff

- Identify components

- List different kinds of storage — What are their properties?