When and Where?

- **When:** Tuesdays and Thursdays 7:00 - 8:50 PM
- **Where:** Willow Creek Center (WCC) 312
- **Office hours:** Tuesday and Thursday after class, or by appointment
- **TA:** Yafei Yang (yafei at cecs dot pdx dot edu)
- **Webpage:** [http://ece.pdx.edu/~zeshan/ece586.htm](http://ece.pdx.edu/~zeshan/ece586.htm)
- Go to the course webpage for:
  - Class slides
  - Course syllabus
  - Course schedule
  - Homework assignments and solutions
Course Information


- Supplemental materials (papers, articles, tutorials) for certain topics will be provided by the instructor

- We’ll also cover research papers and articles published in computer architecture conference/journals
  - Homework assignments may require paper reading
Expected Background

• ECE485/585 or equivalent
  – Basic knowledge of computer organization (processor, memory, I/O)
  – Design of a simple uniprocessor
  – Basic knowledge of instruction set architecture
  – Programming experience in a high-level language (for example, C or C++) needed for course project

• If you lack some of this background, please refer to “Computer Organization and Design: The Hardware/Software Interface”, 4th Edition, Hennessy and Patterson
Grading Policy

- **Homeworks** 20%
  - 4 homework assignments, each worth 5%
- **Class Project** 20%
- **Midterm Exam** 25%
- **Final Exam** 35%

**Grading scale (tentative):**

- A: 92-100%  
  A-: 87-91.5%
- B+: 83-86.5%  
  B: 79-82.5%  
  B-: 75-78.5%
- C+: 71-74.5%  
  C: 67-70.5%  
  C-: 63-66.5%
- D+: 59-62.5%  
  D: 55-58.5%  
  D-: 50-54.5%
- F: Below 50%
Other Policies

• All homework assignments due in class. No extensions
  – Electronic homework submission (via e-mail to instructor) allowed
  – Submission must be received before the class start time

• Midterm exam in class during week 6
  – Tuesday, May 5, 7:00 – 8:30 PM

• Final exam will cover entire course with more emphasis on material taught after the midterm exam

• Final project will require simulation of architecture features in software. More details will be provided later
What this course is all about?

Computer Architecture = Instruction Set Architecture + Computer Organization + Computer Hardware
Course Topics

- Technology and Economics of Computer Design
- Measuring, reporting and summarizing computer performance
- Instruction set architectures
- Number representation and computer arithmetic
- Processor datapath and pipelining
- Instruction-level parallelism
- Branch Prediction
- Advanced topics in processor architecture