CSE 564 Computer Architecture
Summer 2017

Department of Computer Science and Engineering
Yonghong Yan
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Course information

- **Meeting Time:** 5:30 pm – 8:50 pm Monday Wednesday
- **Place:** Engineering Center 566
- **Grade:** 50% for 4 homeworks, 20% midterm + 30% final exam

- **Instructor:** Yonghong Yan
  - [www.secs.oakland.edu/~yan](http://www.secs.oakland.edu/~yan), yan@oakland.edu
  - **Office:** 534 Engineering Center, **Tel:** (248) 370-4087
  - **Office Hours:** Monday 11:00 - 12:30PM, after class or by appointment

- **Public Course website:** [http://passlab.github.io/CSE564](http://passlab.github.io/CSE564)
- **Private and homework submission:** moodle
- **Syllabus** for more details
Objectives

• Fundamentals and applications of computer architecture knowledge
  – Understand in-depth how software interacts with hardware
    • Instruction set and system software (compiler)
  – Explain key concepts in computer architectures
    • Processor architecture, memory hierarchy and cache coherence, CPU pipeline and out-of-order execution, instruction, data and thread level parallelism
  – Perform quantitative design and analysis of computer architecture for computer programming
  – Follow advanced and emerging technology and architectures

• Design of microprocessors using high-level hardware description languages
  – Knowing Chisel for designing RISC-V architectures
Required textbook

  - John L. Hennessy and David A. Patterson
  - Bible of computer architecture for graduate course
Reference textbook

  – John L. Hennessy and David A. Patterson
  – Sister book of the Bible for undergraduate course
Exams and Assignments

• Exams (50%): Test Fundamentals, close book/notes
  – Midterm (20%): 06/05 Monday during class
  – Final (30%): 06/26 Monday 5:30 – 8:50PM

• 4 Assignments (50%): Questions and development
  – Require both good and correct programming for processor design
  – Report and discuss your findings in report
    • Writing good document

• Attendance is NOT required, but highly recommended.
# Schedule

## May

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Prerequisites

• Good reasoning and analytical skills
• Skills of programming
  – C: macro, pointer, array, struct, union, function pointer, etc.
  – Java or other high-level languages
  – Scripting will help
• Basic (undergraduate) knowledge of computer architecture
  – Processor architecture, memory hierarchy, etc
• Familiarity with Linux environment
• Talk with me if you have concern