

Computer Architecture and Organization

Fall 2013

- Course Goals:** In depth understanding of modern computer architecture, fundamental issues, and engineering tradeoffs. How to design a computer system. Understanding how a computer system works and why it performs as it does.
- Course Prereq:** Digital Design
Computer Programming and Problem Solving
- Instructor:** Shuai Wang (swang@nju.edu.cn)
<http://cs.nju.edu.cn/swang>
Office: 406 CS Department Building
- Class Meeting:** Monday, 8:00AM – 9:50AM, Xian-I 104
Friday, 10:10AM – 12:00PM, Xian-I 104
- URL:** http://cs.nju.edu.cn/swang/CompArchOrg_13F
- Textbook:** *Computer Organization and Architecture*, by Chunfeng Yuan, Tsinghua Pub, 2010.
(In Chinese)
- Reference Book:** *Computer Organization and Design: The Hardware/Software Interface*, by David A. Patterson and John L. Hennessy, 4th Edition, 2008.
- Slides:** Posted on course webpage after the lecture
- Grading Policy:** Class Participation ~10%
Homework Assignments ~15%
Labs and Projects ~20%
Mid-term Exam ~20%
Final Exam ~35%
- Course Structure:** Computer System Overview
(Tentative)
Data Representation
Arithmetic Logic Unit (ALU)
Memory Hierarchy
Instruction Set Architecture (ISA)
Central Processing Unit (CPU)
Pipeline
Bus & I/O
- Honor code:** Any cheating or plagiarism will be brought to the immediate attention of the Dean
(Academic Integrity) of Student Study.