

# Computer Architecture and Organization

Fall 2012

- 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:** Tuesday, 8:00AM – 9:50AM, Yi-B 307  
Thursday, 10:10AM – 12:00PM, Yi-B 303
- URL:** [http://cs.nju.edu.cn/swang/CompArchOrg\\_12F](http://cs.nju.edu.cn/swang/CompArchOrg_12F)
- Textbook:** *Computer Organization and Architecture*, by Chunfeng Yuan, Tsinghua Pub, 2010. (In Chinese)  
*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.