

Computer Architecture

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Text: *Computer architecture, A quantitative approach*,
D. A. Patterson and J. L. Hennessy.
The fifth edition, 2012

Web page: <http://caslab.ee.ncku.edu.tw>

Class Format

- Review
- Lecture
- Lecture/Discussion
- New technology presentation
- LAB: Full System Designs/GPU
- *Discussion based
on your readings of papers*

Course Outline

- Handout 1: Introduction and Review of Pipeline CPU
- Handout 2: Instruction level parallelism (Part A and Part B)
- Handout 3: Multiprocessor and thread-level parallelism
- Handout 4: Memory hierarchy and optimization technique
- Handout 5: New memory technology
- Handout 6: ESL full system design and verification
- Handout 7: GPU and SIMD processors, OPEN CL
- Handout 8: Virtual machine and Virtualization techniques
- Handout 9: Container Computers or Warehouse-Scale Computers

Grading

- Project (Software-and-Hardware Full System Design and Simulation, GPU exercises)
- Examinations (3 Quizzes)
- Class Participation/Presentation and Paper reviews