EE 4720: Computer Architecture

Syllabus

Where/When/Web/RSS

Room 3142 P. Taylor Hall (née CEBA)
Monday Wednesday Friday 10:40–11:30 Fall 2008
`http://www.ece.lsu.edu/ee4720/`
RSS: `http://www.ece.lsu.edu/ee4720/rss_home.xml`

Who

David M. Koppelman
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Tentative Office Hours: Monday–Friday: 9:00–10:00.

Topics

Instruction-Set Architecture and Microarchitecture

- Architecture and microarchitecture (implementation).
- Instruction set design and examples.

CPU Implementation

- Datapath components.
- Basic pipelining techniques.
- Basic scheduling techniques.
- Dynamic scheduling, register renaming techniques.
- Branch and target prediction, speculation, and, of course, misprediction recovery.
- Multiple instruction issue: superscalar and VLIW/EPIC.

Memory System Implementation

- Locality, the computer engineer's best friend.
- Caches.
- Virtual memory.

Text

Optional: "Computer architecture, a quantitative approach," John L. Hennessy & David A. Patterson, or "Computer organization & design," David A. Patterson & John L. Hennessy.

Grading

40% Midterm Exam • 40% Final Exam • 20% Homework
Final exam weight may be increased for students who show significant improvement on the final exam.

Late-homework penalty: 10% per day late deducted. Missed-midterm-exam policy: at instructor's discretion either a makeup exam, use final exam grade for midterm grade (*i.e.*, 80% final exam weight), or use zero for midterm grade. Daily attendance: optional, however students are responsible for all material, instructions, and notices presented in class.