

EE 4720: Computer Architecture

Syllabus

Where/When/How/URL

1112 CEBA Building
Monday Wednesday Friday 13:40–14:30 Spring 2000
Call Number 1665
<http://www.ee.lsu.edu/ee4720>

Who

David M. Koppelman
Room 349 Electrical Engineering Building
388-5482, koppel@ee.lsu.edu, <http://www.ee.lsu.edu/koppel/koppel.html>
Tentative Office Hours: Monday 9:40–11:10, Thursday 14:00–16:30.

Topics

Instruction-Set Architecture and Microarchitecture

- Architecture and microarchitecture (implementation).
- Design principles.
- 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

“Computer architecture, a quantitative approach,” John L. Hennessy & David A. Patterson, Second Edition.

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.*, 70% 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.