EE 4720: Computer Architecture

Syllabus

Where/When/How/URL

1111 CEBA
Monday Wednesday Friday 10:40–11:30 Fall 1999
Call Number 7114
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
Tentative Office Hours: Monday, Thursday 13:40–16:10.

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 a student who shows 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.