

# EE 4720: Computer Architecture

## Syllabus

### Where/When/Web/RSS

Room 226 Tureaud Hall

Monday Wednesday Friday 9:40–10:30 **Spring 2011**

<http://www.ece.lsu.edu/ee4720/>

RSS: [http://www.ece.lsu.edu/ee4720/rss\\_home.xml](http://www.ece.lsu.edu/ee4720/rss_home.xml)

### Who

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Tentative Office Hours: Monday–Friday: 14:00–15:00.

### 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.