

# EE 4720: Computer Architecture

## Syllabus

### Where/When/How/URL

3141 CEBA Building  
Monday Wednesday Friday 13:40–14:30 **Spring 2004**  
Call Number 1911  
<http://www.ece.lsu.edu/ee4720/>

### Who

David M. Koppelman  
Room 349 Electrical Engineering Building  
578-5482, [koppel@ece.lsu.edu](mailto:koppel@ece.lsu.edu), <http://www.ece.lsu.edu/koppel>  
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

“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.