

EE 4720: Computer Architecture

Syllabus

Where/When/Web/RSS

Room 114 Lockett Hall
Monday Wednesday Friday 9:30–10:20 Spring 2017
<http://www.ece.lsu.edu/ee4720/>
http://www.ece.lsu.edu/ee4720/rss_home.xml

Who

David M. Koppelman
Room 345 ERAD
578-5482, koppel@ece.lsu.edu,
<http://www.ece.lsu.edu/koppel>
Tentative Office Hours: Monday–Friday: 14:00–15:00.

Topics

Instruction-Set Architecture and Microarchitecture
Architecture and microarchitecture.
Instruction set design and examples.

CPU Implementation

Datapath components and basic pipelining techniques.
Basic scheduling techniques.
Get the most out of your datapath: dynamic scheduling (out-of-order execution).
Branch and target prediction, and of course misprediction recovery.
Provide more datapath: Superscalar, VLIW, and deeper pipelines.
Parallel organizations: cluster, multi-core, many-core.

Memory system implementation.

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.

A.D.A.

Louisiana State University is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Any student with a documented disability needing academic adjustments is requested to speak with Disability Services and the instructor, as early in the semester as possible. All discussions will remain confidential. Please contact Disability Services in 115 Johnston Hall, 225-578-5919 or at <http://www.lsu.edu/disability>.

