

Call Number 7351 (Fall 1998)

URL: <http://www.ee.lsu.edu/tca>

Offered by:

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Tentative office hours: Monday, Thursday 13:30–16:00

Should already know:

How to design a computer.

How to design a *good* computer.

Will learn:

How to design a *better* computer.

### Prerequisites By Course:

EE 4720, Computer Architecture

### Prerequisites By Topic:

- Logic design.
- Computer organization.
- Assembly-language programming.
- Computer architecture.
- C programming.

### Text

“Computer architecture, a quantitative approach,” John L. Hennessy & David A. Patterson, Second Edition. (One or two chapters used.)

Technical papers. (Many will be linked to web site.)

## Course Content

- Simulation and instrumentation techniques
- Branch and data prediction.
- Advanced implementation techniques.
- Prefetch and advanced caching techniques.
- Symmetric multiprocessing (shared memory computers).
- Multithreading.
- Non-standard control-flow machines.
- *And more!* (Time permitting.)

Midterm Exam, 35%

Fifty minutes, open book.

Final Exam, 35%

Two hours, open book.

Homework and Mini-Projects, 30%

Lowest grade or unsubmitted assignment dropped.

Analyze or simulate some architectural feature.

Use real research tools.

Examples:

Test new branch prediction technique.

See how useful a new instruction would be.

But won't that be hard?

Not that hard.

Programs for similar problems will be provided.