**Fall 2004 Midterm Exam 2.0 Review**

**When / Where**
- Friday, 12 November 2004, 10:40-11:30 CST
- CEBA 3142 (Here)

**Conditions**
- Closed Book, Closed Notes
- Bring one sheet of notes (both sides), 216 mm x 280 mm.
- No use of communication devices.

**Format**
- Several problems, short-answer questions.

**Resources**
- Solved tests and homework: [http://www.ece.lsu.edu/ee4720/prev.html](http://www.ece.lsu.edu/ee4720/prev.html)

**Study Recommendations**
- Study this semester’s homework assignments. Similar problems may appear on the exam.
- Solve Old Problems
- Memorizing solutions is not the same as solving.
- Following and understanding solutions is not the same as solving.
- Use the solutions for brief hints and to check your own solutions.

**Previous Midterms**

**Emphasis**
- Implementation Diagrams and Pipeline Execution Diagrams
  - They are a team, so study them together.

**Instruction Use**
- Should be able to easily understand MIPS programs.
- Should be able to use other instructions in examples.
  - For example, SPARC, DLX, etc.
- Not required to memorize instruction names, except for common MIPS instructions.

**Topics**
- Statically Scheduled MIPS Implementations
  - Unpipelined Implementation
  - Pipelined Implementations
    - Basic (2-cycle branch penalty).
    - Zero-cycle branch penalty.
    - Bypassed.
Dependency Definitions

Hazard Definitions

For a Given Pipelined Implementation

  Show pipeline execution diagrams.
  Show register contents at any cycle.
  Determine control hardware.
  Determine CPI.