

CSCI 2321 (Principles of Computer Design), Spring 2002

Review for Final Exam

1 Format of the exam

The exam will be at the scheduled exam period, May 3 at 8:30am. It will be about twice the length of the in-class exams and so should take about two hours, but you will have the whole three-hour exam period if you need it. You may use your textbook and any notes or papers you care to bring, but you may not use other books, a calculator or computer, or each other's papers.

Most questions will be similar in form to those in the homeworks and on previous exams.

The exam will cover everything we have done this semester, but there will be an emphasis on material not covered in previous exams.

2 Lecture topics to review

You are responsible for all material covered in class. The following is a summary of recent topics I consider most important; see the review sheets for Exam 1¹ and Exam 2² for lists of earlier topics.

- Design of a datapath for a multiple-cycle implementation of our selected subset of MIPS instructions: what elements are needed, how to connect them, what control signals are needed, how to break instructions down into single-cycle steps.
- Generating control signals for our multiple-cycle implementation, using either a finite state machine or microprogramming; implementing a finite state machine; implementing microprogramming.
- How the completed multiple-cycle implementation (datapath and control) executes example instructions.
- Extending the datapath and control to support exceptions (interrupts).

3 Reading to review

The following is a list of recent reading to read more carefully and/or review; see the review sheets for Exam 1³ and Exam 2⁴ for notes on earlier reading.

- In chapter 5: 5.4, 5.5, and 5.6 (but you may skim material about estimating performance). You may also find it helpful to look at 5.9.

¹http://www.cs.trinity.edu/~bmassing/CS2321_2002spring/Notes/review-exam1/index.html

²http://www.cs.trinity.edu/~bmassing/CS2321_2002spring/Notes/review-exam2/index.html

³http://www.cs.trinity.edu/~bmassing/CS2321_2002spring/Notes/review-exam1/index.html

⁴http://www.cs.trinity.edu/~bmassing/CS2321_2002spring/Notes/review-exam2/index.html