

# CSCI 2321 (Computer Design), Spring 2020

## Review for Exam 1

The exam will be conducted remotely (via a Zoom meeting) at two times (you choose which works better for you):

- Thursday March 26, 5pm–7pm
- Friday March 26, 4pm–6pm

If neither time works for you, send me e-mail and we can negotiate. Note that you will have two hours. I plan to be available during these times in case you have questions.

I'll put a PDF of the exam in the shared Google-Docs folder for the course shortly before the start time(s). You will create a PDF containing your answers. It can be an edited copy of my PDF (if you have software to do that) or something generated by a word processor. You will turn this in via e-mail or by placing it in your “graded work” folder.

Like the quizzes, it's “open book / open notes”, which means you can consult paper or electronic copies of the textbook and your notes, sample solutions *from this year only*, your own graded work, and anything on the course Web site. You may not use other books, materials from this course from previous years, a calculator or computer (except as needed to consult allowed sources), or (of course) each other's papers. *Notice the restriction on computer use. In particular you're not allowed to try things using SPIM.*

Questions will mostly be similar in format to the ones in quizzes, non-opinion minute essays, and homeworks; difficulty/length will mostly be somewhere between quiz questions and homework problems. There will also likely be a few multiple-choice or true/false questions.

### 1 Lecture topics to review

You are responsible for all material covered in class or in the assigned reading from Chapters 1 and 2 and Appendix A of the textbook. You should review in particular the following topics. It would probably also be helpful to review sample solutions for the quizzes, assignments, and any minute essays that have well-defined answers.

- Terminology/concepts from Chapter 1 (machine language, instruction set architecture, assemblers, etc.).
- Defining and measuring performance; relationship among execution time, clock rate, cycle time, and cycles per instruction.
- Idea of “instruction set architecture” (as the interface between hardware and software).
- MIPS instructions described in Chapter 2 — usage and binary (machine-language) representation.
- Compilers, assemblers, linkers, and loaders — what each phase does, a little about how they work together.
- MIPS conventions for procedure calls.

## 2 Reading to review

You should have read, or at least skimmed, all of the assigned reading from Chapters 1 and 2 and Appendix A, but the focus will be on material presented or at least mentioned in class.