CSCI 4520
Final Exam Review Sheet
Fall 2019

EXAM TIME: Friday December 6, 11:00 A.M. – 1:30 P.M.

The exam is closed-book and closed-note. As in other exams, handouts of slides such as Table 3.1, Figure 6.15, and Table 7.11 will be provided.

The exam is comprehensive, and the questions will be of a similar style to those of the homework problems and the quizzes. You can expect questions that cover the entire set of chapters that we have studied this semester. More specific information is included below.

1. Be able to describe the specific purpose of every register in the Relatively Simple CPU. A CPU is designed for the purpose of carrying out the instructions of an instruction set. “Specific” means connecting the purpose of the register to the execution of the available instructions.

2. Approximately 20% of the exam will be based on the new material from Chapter 12, sections 1 through 4.

3. There will be a question similar to question 4 of the third quiz where you will be asked to specify the address bits and chip enable for a set of memory chips that comprise a memory subsystem.

4. There will be several questions that evaluate your comprehensive understanding of system design based on the principles we studied from chapters 4 through 7. More specific expectations are provided below. However, this is not an exhaustive list of questions. These expectations provided a focused starting point for your review.
   a. There will be a question similar to question 2 of the fourth quiz where you be asked to demonstrate in-depth understanding of the FDE cycle for a given instruction by modifying the cycle based on revised specifications for the Relatively Simple CPU.
   b. Given the description of a set of control signals that are used in the Relatively Simple CPU, be able to specify which ones are used for carrying out a specific instruction and be able to put them in the correct order.
   c. Be prepared to redesign or extend the design of some component of either the Very Simple or Relatively Simple CPU. This includes the microsequencer control.

Tips for Preparing

- Work and rework sample exercises and problems. For questions that you previously worked incorrectly, reflect on the nature of any misconceptions/misunderstanding/lack of that led to the error(s). Form study groups and ask each other questions or else individually work on problems and compare solutions. When studying given designs, be able to explain why the particular design was chosen and how it operates.

- Be well rested so that you can think clearly and read carefully.

Exam Period Office Hours: Fall 2019 (Regular office hours end Monday December 2)
Thursday December 5: 1:30 - 4:30 P.M.
Friday December 6: 9:30 - 10:30 A.M.