

## **COS 335 Spring 2009 Study Guide: Prelim 1**

The exam is closed book and *no electronic devices of any type are allowed*, including calculators, computers, cell phones, music players, etc. You are allowed one 8½ x 11 *handwritten* page of notes (both sides); if used the notes must be attached to exam when you turn it in.

### **General Coverage**

Text Chs. 1 through 5; most exam questions will be short answer, multiple-choice and true/false. Some longer problem-solving questions will involve cache memory and Hamming codes. Assembler material covered on the exam will be number systems: unsigned binary, hex, integer representations, floating point representation, characters, BCD, etc. You can expect problems similar to the problems in HW2. A hex-to-binary conversion table and a table of powers of 2 will be provided with the exam. There will be a few rather general questions related to the overview of Intel x86 architecture. I will not ask questions requiring detailed knowledge at this point.

### **Textbook**

Ch 1. Terminology and definitions from 1.2. Note that "movement" is equivalent to I/O.

Ch 2. See key terms, p.50. Detailed historical knowledge will not be expected. However the basic concepts driving and responsible for recent performance improvements will be covered.

Ch 3. See key terms and review questions, p.95. You should be familiar with basic concepts of bus operation. You will not be required to read or write detailed bus timing diagrams.

Ch 4. See key terms and review questions, p.132. You should understand the memory hierarchy, the different types of cache, and how memory addresses are mapped to different types of cache

Ch. 5 See key terms and review questions, p.165. You should understand the differences between SRAM and DRAM; the characteristics of various types of memory (ROM, EPROM, etc); the differences between logical and physical organization of memory; parity bits, error detection and correction, and Hamming codes.