EC513: Computer Architecture – Fall, 2013

Basics
Instructor: Martin Herbordt, PHO 333
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Mission Statement: “What you need to know about computation logic to build ASICs, FPGAs, and Embedded Systems.”

Course Description: Principles of computer architecture and design, including computer arithmetic and ALU design, instruction sets, CPU design, memory hierarchies, and I/O systems. Case studies.

Prerequisites: For undergraduates, EC413 (Computer Organization). For graduate students, high-level language programming and basic knowledge of computer organization and a working knowledge of assembly language. Knowledge of operating systems will be useful.


Course Mechanics
• Classes: The overall class style is lecture/exam.
• Grading: Exams: 65%
  Homework Assignments: 20%
  Final Project: 15%
• Exams: There will be two mid-term exams and a final. Exams are open textbook and open notes.
• Homework: There will be eight to nine homework assignments. You are encouraged to work together to learn the material and to discuss approaches to solving homework problems. However, you must come up with and write-up the solutions on your own. See “academic honesty” below.
• Programming Assignments: There may be a few programming assignments (up to 3) related to assembly language and to probing and analyzing computers. Probe programs will be short.
• Final Project: The purpose is to add depth in one particular area of what is a broad course. Possibilities include doing a performance evaluation study, writing a report on a design issue, and creating a design. Topics vary substantially depending on your interests and experience.
Administration

- **Office Hours:** Office hours are tentatively MW 3-5. The best time to catch me otherwise is right after class; the worst time is right before class! On rare occasion I may be unable to keep office hours, so please contact me before traveling a long way to meet me.

- **Email:** You are required to periodically check your email since this is the way many assignments will be distributed. Questions via email are always good. If the solution has general interest, I will broadcast it to the class (leaving the questioner anonymous); if the solution is very involved, we may need to go over it in person. Also, please check your email for unexpected occurrences like errors in assignments, cancellations, etc.

- **Course Web Site:** The BlackBoard site is given above. I use it to post class notes, lab and homework assignments, HW solution sketches, and other course information.

- **Incompletes:** Incompletes will be granted only in accordance with university policy, which (broadly) requires a major non-academic crisis near the end of the semester.

- **Course Notes:** I hand out lecture slides before class. I strongly recommend annotating them during class and rereading them before the next class.

- **Academic Honesty:** Please read the university academic honesty policy. If something is not clear, then ask. In particular, plagiarism is regarded as a serious offence.

- **HW Solutions:** I post solution sketches to HW assignments, although with great reluctance. I believe that solutions are great for quickly finding minor problems, but otherwise a very bad way to learn material. If you are having difficulty, the best thing is to see me outside of class.

- **Distractions:** What was that? Please keep all electronic devices off during class.