

Digital Computer Architecture ECEG352

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Office Hour: Monday 3-4pm or by appointment

Texts

1. "Computer Architecture: A Quantitative Approach," John L. Hennessy and David A. Patterson, **ISBN-10:** 0123704901 **ISBN-13:** 978-0123704900

Course Objectives

1. Review the fundamental system elements in a computer system.
2. Develop a better understanding of the hardware-software interface.
3. Demonstrate quantitative methods to evaluate different design implementations
4. Provide an in-depth study of the critical system elements including, the processor pipeline, memory hierarchy, bus interconnects and the I/O subsystem.
5. Understand the role of operating systems in current systems.
6. Explore current trends in the computer architecture field, including embedded computing, virtualization, low power and cluster computing.

Grading: Homework Assignments: 30% Final Exam: 30% Project: 30% Presentation: 5% Participation: 5%

Homeworks

During the semester there will be homework problem sets assigned bi-weekly. Many of the problems will be taken from the problem sets appearing at the end of each chapter in the H&P course text. Some of the homeworks will involve small projects. Usually, homework is due at 12:00am Monday nights. They should be submitted electronically. Late homework will be penalized 20% for being one day late and will not be accepted thereafter. You can discuss with others approaches to solving homework problems. However, you must come up with and write-up the solutions on your own.

Critical Paper Review

During the semester there will be sets of papers provided that should build upon the principles presented in the textbook. You are responsible for all of the material contained in these papers. All of these papers will be available on the course website in pdf format. From these papers you will be asked to select one and write a critical paper review. The review should be at least 5 pages in length, single spaced, and typewritten. The review should be technical in nature. It should not merely summarize the paper. Instead it should critique the paper, drawing on one or a number of the references listed in the papers as a comparison.

You should address the following questions in your review:

1. What is the problem being addressed?
2. What methods are used to evaluate this problem and/or solution?
3. Are the methods used valid and proper?
4. What conclusions can we draw from the results presented?
5. How do results in the cited references compare with those presented in this paper?
6. Is this paper well written?

Exams

There will be a final exam. The exam will be open book and open notes.

Project

There will be a major project assigned. See the course website for details when assigned.