I. Course

A. Catalog Description

Cr. 3. (3-0). Prerequisite: COSC 4330. Elements of computer architecture: instruction set design, computer arithmetic, memory hierarchies, instruction level parallelism, SIMD, MIMD, system design and performance values.

B. Purpose
The purpose of the class is to make graduate students familiar with advanced concepts used in nowadays computing systems, including recent developments for micro-processors, networking and I/O storage.

II. Course Objectives

Upon completion of this course, students will be able understand and evaluate quantitatively (and qualitatively where applicable) features of modern computers, such as pipelining, instruction level parallelism, memory hierarchies, various storage systems and network interconnect technologies.

III. Course Content

This course will include the following topical (content) areas:

1. Instruction Set Principles
2. Pipelining
3. Vector processors
4. Instruction Level Parallelism
5. Memory Hierarchies
6. Multiprocessors systems
7. Storage systems
8. Network interconnects

IV. Course Structure
The course will start by reviewing some of the topics of the undergraduate computer architecture course in order to generate a homogeneous base knowledge among the students. Presentation of new topics will typically include the theoretical presentation of the material, presentation of real-world systems applying the feature and (if applicable) experimental settings and data. Lectures will be complemented by discussions with the students and calculating example problems.

V. Textbooks
Required textbook:

Optional textbook:

VI. Course Requirements.

A. Reading Assignments
According chapters of the textbook

B. Written Assignments

C. Projects (as needed)

D. Exams (as needed)

VII. Evaluation and Grading

☐ 1 homework: 10%
☐ 1 presentation at the end of the semester: 20%
☐ 2 midterm quizzes: 40% (20% each)
☐ final exam: 30%.
Policy on grades of I (Incomplete):

Students missing a small part of the overall course requirements due to reasons beyond their influence will get the opportunity to finish the according part later on. Decision will be made on a case by case basis.

VIII. Consultation

Instructor can be reached by email, phone, during the office hours as well as by scheduling an appointment. The information is available e.g. at the top of this page. A web-site including all documents related to this course is available at: http://www.cs.uh.edu/~gabriel/cosc6385_f06/

IX. Bibliography

More information is available at the web-site, e.g. http://www.cs.uh.edu/~gabriel/cosc6385_f06/

Whenever possible, and in accordance with 504/ADA guidelines, the University of Houston will attempt to provide reasonable academic accommodations to students who request and require them. Please call 713-743-5400 for more assistance.