

COURSE SYLLABUS

<i>Semester and Year Course Offered</i>	<i>Fall 2012</i>
<i>Department</i>	<i>Computer Science</i>
<i>Course Number and Name</i>	<i>COSC 3330/6308—Computer Architecture</i>
<i>Instructor:</i>	Jehan-François Pâris
<i>E-mail Address:</i>	jparis AT uh DOT edu
<i>Office:</i>	569 PGH
<i>Telephone:</i>	713-743-3341 during office hours
<i>Class Schedule</i>	MW 4:00-5:30 pm in C 104
<i>Office Hours:</i>	MW 3:00-3:45 and 5:30-6:30
<i>Course Web Page:</i>	http://www.cs.uh.edu/~paris/3330/resources.htm
<i>PowerPoint Slides of Lectures:</i>	http://www.cs.uh.edu/~paris/3330/PowerPoint
<i>Course Email Group:</i>	COSC_3330_fall_2012
<i>Twitter:</i>	jehanfrancois (for brief urgent announcements)
<i>Teaching Assistants</i>	Xifeng Gao (gxf.xisha AT gmail DOT com) <i>Hours:</i> Th 4:30-6 pm in PGH 309 Salah Taamneh (taamneh_07 AT hotmail DOT com) <i>Hours:</i> M 1-2 pm and Tu 11am-12 noon in PGH 201

The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

LEARNING OBJECTIVES

Understanding the qualitative and quantitative aspects of computer architecture.

MAJOR ASSIGNMENTS/EXAMINATIONS

There will be two midterms (20% of your grade each), one final (40%) and three to five problem sets (20%). Late problem sets will be assessed a penalty of **10 points per day** unless announced otherwise.

All tests will be **closed book**. You will be responsible for all materials discussed in class (but not for the readings). You will be allowed **one 8.5"×11"page** of notes for each test. Each test will cover the materials not covered by the previous test(s).

No cheating will be tolerated on any graded assignment: **what you turn in must be your own work**. **The minimum penalty for any transgression will be an F grade for the course.**

IMPORTANT DATES

<i>First Midterm</i>	Monday, October 1
<i>Second Midterm</i>	Monday, November 5
<i>Final</i>	Friday, December 14 at 5:00 pm

REQUIRED READINGS

None.

RECOMMENDED READINGS

D. A. Patterson and J. L. Hennessy, *Computer Organization and Design*, Morgan Kaufmann, 4th Edition, 2009. (*The third edition is likely to be acceptable if you are willing to Xerox a few pages.*)

LIST OF DISCUSSION/LECTURE TOPICS

Topic	Optional Readings
Introduction.	Chapter 1
Principles of digital design: Boolean algebra, gates, combinatorial circuits, ALU, flip-flops, latches and registers, SRAM and DRAM, finite state machines.	Appendix B
Control units: combinational control units and finite state machine control	Appendix C
Instruction set design: A very quick review	Chapter 2
Computer arithmetic: addition and subtraction, multiplication, division, floating point operations.	Chapter 3
The processor: data paths, pipelining, data and control hazards, parallelism.	Chapter 4
The memory hierarchy: main memory, cache organization, cache consistency.	Chapter 5
Storage systems: hard drives flash drives, RAID arrays, performance issues	Chapter 6
Parallel architectures: multicore, multiprocessors, clusters, hardware multithreading	Chapter 7

IMPORTANT

1. **The COSC 2410 prerequisite will be strictly enforced.**
2. One or two lectures may have to be rescheduled due to time conflicts.
3. Please contact me if you have **any special needs**. We will work around them.
4. Please verify that the university has your **correct email address**: I will use it whenever I have to get in touch with you.
5. **People obviously immersed in non course-related activities such as browsing the web or playing solitaire will be asked to leave the classroom.**

A LAST WORD

This syllabus was prepared to satisfy the requirements of the University of Houston interpretation of [Texas House Bill 2504](#) titled “An act relating to requiring a public institution of higher education to establish uniform standards for publishing cost of attendance information, to conduct student course evaluations of faculty, and to make certain information available on the Internet.”