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Computer Organization

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CUNY City College

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CSC 34200 – 1XW: Computer Organization

Office Hours: Monday & Wednesday 6:00pm – 8:30pm

Office Location: Baskervill 106

Prof. Alex Meng

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❖ **Description:** computer abstractions and technology; the role of performance and measuring performance; SPEC, computer arithmetic; machine language; a comparative analysis of instruction sets of current processors using debuggers, simulators and by the partial reverse engineering of executables. The processor: datapath and control; RISC vs CISC; design, implementation (using VHDL), and verification (in simulation) of a simplified RISC processor using CAD tools. Enhancing performance with pipelining. Memory hierarchy, cache, virtual memory, performance issues, interfacing processors and peripherals; PCI chipset. Overview of multiprocessors, grid computing.

❖ **Textbook: NO TEXTBOOK REQUIRED**

❖ **Recommended Resources:**

➤ Computer Organization and Design (5th Ed.), by Paterson and Hennessy

❖ **Prerequisites:** CSC 21100 OR (CSC 21000 AND EE 21000).

❖ **Course Organization**

➤ Homework	0%
➤ Midterm 1	20%
➤ Midterm 2	20%
➤ Projects	25%
➤ Final Exam	35%

❖ **Course Schedule (Spring 2018, tentative)**

Week 1,2	Intro. Computer Organization	HW1
Week 3-5	MIPS and Memory Hierarchy	HW2
Week 6,7	Midterm 1, MIPS Architecture	HW3
Week 8,9	Arithmetic for Computers	HW4
Week 10,11	The Processor, Midterm 2	HW5
Week 12,13	I/O Interfaces & Parallel Computing	HW6
Week 14	Review Sessions	

REQUIRED ACCESS TO SOFTWARE & HARDWARE: You will need access to a Windows PC with a current version of 3DS Max/VRay/Adobe CS to complete the course requirements. You must have, before taking this course, a good understanding of how to use Microsoft Windows computers and basic Windows software such as internet browsers, email clients, and image viewers. You must have access to the Internet to complete this course, as well. If you are not comfortable with typical Windows hardware and software or Internet usage, you should take a remedial course in basic PC use before undertaking this one. It is entirely students' responsibility to schedule sufficient time with hardware and software tools to complete the assigned work. Since these tools are available at the school during reasonable hours to all students, no due-date extensions or special considerations will be made for claims that hardware or software was unavailable. It is student's responsibility to obtain software for home use. Students are responsible for making back-up copies of their work and keeping track of them. Work that is not submitted on time because of hard drive or flash drive failure will be penalized as late.