**Syllabus**

**Course Information**

**Name:** CSCI 240 – Computer Organization and Assembly Language

**Prerequisite:** CSCI 111 - Algorithmic Problem Solving I

**Time:** Tuesday and Thursday 8:30 PM – 9:45 PM

The topics, as listed in the bulletin, are: Principles of computer design and implementation; instruction set

architecture and register-transfer level execution; storage formats; binary data encoding; assembly language programming.

The primary goal of the course is to understand the operation of the computer at its most basic level from

the programmer’s perspective. This allows one to study the computer from above, how software is

handled by the hardware, and below, how the hardware is implemented to support the basic functionality.

On the most practical level, this course is a preparation for CSCI 343.

**Instructor Information**

**Instructor:** Jackson Yeh

**E-mail:** JYEH@QC.CUNY.EDU

**Office Hours:** SB A201— by appointment

This is a shared office with no direct phone line or voicemail.

All calls/off hour visits should be directed to the CS department—SB A202; (718) 997-3500

**Textbooks**

David A. Patterson and John L. Hennessy: Computer Organization and Design: The Hardware/Software

Interface, Revised Printing, Fourth Edition. Morgan Kaufman, 2008.

• **ISBN-10:** 0123744938

**• ISBN-13:** 978-0123744937

Robert L. Britton.: MIPS Assemby Language Programming, Prentice Hall, 2003.

**• ISBN-10:** 0131420445

**• ISBN-13:** 978-0131420441

**Course Policies**

**Attendance**

Although attendance is not required, it is an essential component to the course. Key facts and concepts that are lightly addressed in the book are elucidated in the lectures. Lectures also give students to a chance to share their learning with other students.

**Electronic Devices**

Cell phones are restricted during class. Cell phones must be turned off during the lecture. If your cell phone rings during class, you may be asked to leave.

**Rescheduling Tests**

Makeup exams will be administered only in cases of severe circumstances and prior notification or official documentation.

**Academic Honesty**

You are expected to adhere to the University policy on academic honesty. I expect each student to complete work independently (unless specified otherwise) and to reflect your own work. Cheating on an exam will result in a failing grade for the exam and possibly for the course. Talking during an exam or looking at the work of fellow students results in immediate termination of the exam.

**Grading**

Midterm - 30%

Project - 30%

Final - 40%

**Computing Requirements**

You will need access to a computer to work on the project.

**Course Structure**

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| --- | --- |
| **Data Representation** | |
| Number Bases Signed Binary numbers Binary arithmetic Floating Points Binary Coded Decimals Characters Data Storage Formats |  |
| **Digital Logic** | |
| Boolean algebra  Digital Logic Gates  Functions Adders Multiplexors, Encoders and Decoders Arithmetic Logic Units Karnaugh Maps |  |
| **Assembly Language** | |
| MIPS Architecture MIPS Instruction Set Programming in MIPS Control Structures Data Structures Functions  Memory Management |  |