

**LAGUARDIA COMMUNITY COLLEGE
CITY UNIVERSITY OF NEW YORK
DEPARTMENT OF MATHEMATICS, ENGINEERING, and COMPUTER SCIENCE**

MAC295 – Computer Architecture (4 CREDITS/5 HOURS)

Catalog Description:

This course is intended for students who are in the computer program or for students interested in developing a background in hardware concepts. Topics covered include number systems, logic circuits, arithmetic circuits, flip-flops, memories, sample designs of simple computers and an introduction to microprogramming. The students should expect to pay for additional materials for this course.

Prerequisites: MAC196 or MAC265, MAT200 or MAT241

Instructional Objectives:

1. To enable the student to gain a working knowledge of computer hardware fundamentals with an emphasis on microprocessors.
2. To familiarize the student with logic circuits, flip-flip, memories and memory chips.
3. To introduce microprogramming for a typical computer
4. To provide the student with sample architectures.

Performance Objective:

1. To explain hardware concepts of small and large computers.
2. To describe logic circuits, flip-flops and memory-chips.
3. To write a micro-program for a typical microcomputer.
4. To draw a blueprint of the architecture of a computer.

Grading Standards:

Written Tests	50%
Class Work	20%
Final Exam	30%
Total	100%

Book:

Digital Fundamentals by Floyd, 10th Edition
ISBN: 10-0-13-235923-5

Course Syllabus

Week 1

- Numbers Systems and Logic Circuits

Week 2

- More Logic Circuits

Week 3

- Arithmetic Circuits

Week 4

- Flip-Flops

Week 5

- Counters

Week 6

- Registers

Week 7

- Memories

Week 8

- Architecture of a very simple computer

Week 9

- Architecture of a simple computer

Week 10

- Architecture of a not so simple computer

Week 11 - 12

- Microprogramming

Week 13

Final Exam