

LAGUARDIA COMMUNITY COLLEGE
CITY UNIVERSITY OF NEW YORK
DEPARTMENT OF MATHEMATICS, ENGINEERING, and COMPUTER SCIENCE
MAC291 – Computer Logic, Design and Implementation I (4 CREDITS/5 HOURS)

Catalog Description:

This course will teach students how a computer logic statement is converted into a circuit. Using binary notation and Boolean algebra, the student will analyze switching networks of logic gates. The circuits which are mathematically described will then be translated into diagrams and implemented on either logic trainers or circuit simulators.

Prerequisites: MAC241, MAT241

Grading Standards:

Written Tests	45%
Class Work and project	25%
Final Exam	30%
Total	100%

Book:

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

Course Syllabus

Week 1

- Numbers Systems,

Week 2

- Introduction to Boolean algebra

Week 3

- Advance Boolean algebra expressions

Week 4

- Introduction to Logic gates and simple logic gate circuitry

Week 5

- Using Boolean algebra to simplify logic gates circuitry

Week 6

- DeMorgan's Theorems and simplification of advanced logic circuitry

Week 7

- 4 variables Karnaugh Maps

Week 8

- 5 and 6 variables Karnaugh Maps

Week 9

- Using Karnaugh Maps to simplify advanced logic circuitry

Week 10

- Half and full Adders, ALU Add/Subtract

Week 11

- Introduction to decoders and encoders

Week 12

- Decoders the methodology of design

Week 13

Final Exam