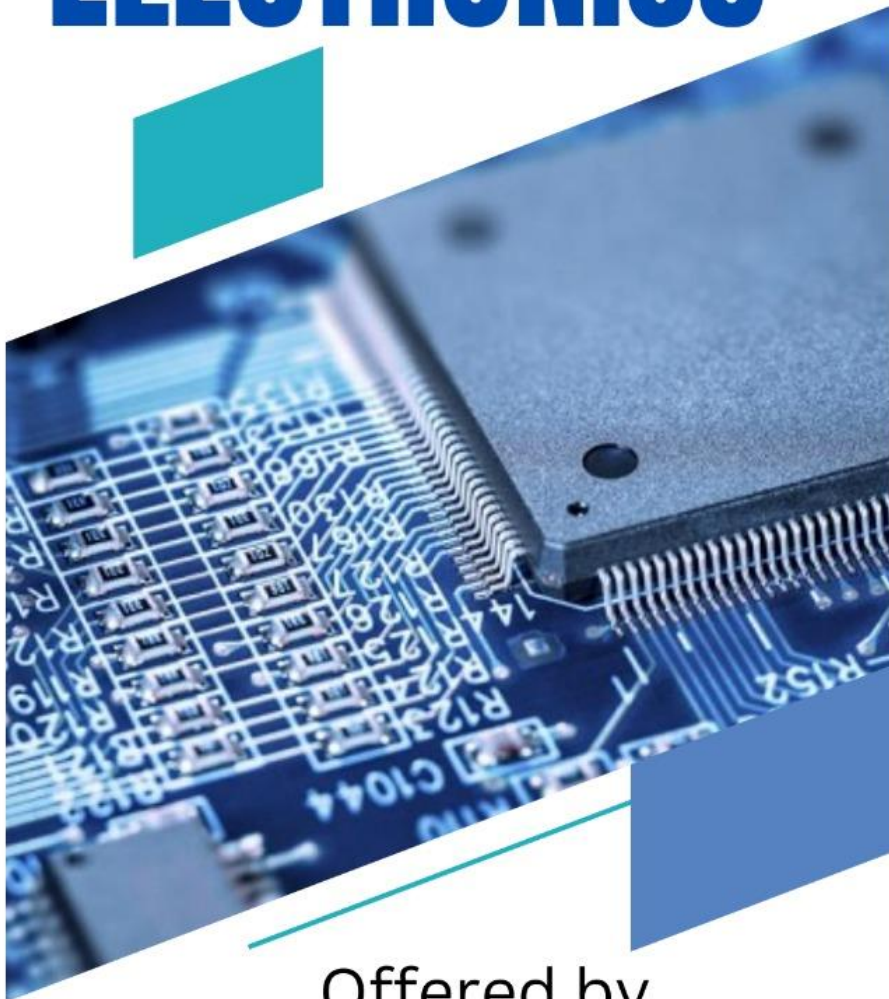

Certificate Course
in
DIGITAL ELECTRONICS **2021**



Offered by

DEPARTMENT OF COMPUTER SCIENCE
NAM COLLEGE KALLIKKANDY

DEPARTMENT OF COMPUTER SCIENCE
CERTIFICATE COURSE IN DIGITAL ELECTRONICS

Module 1 : Introduction, Number System

Module 2 : Logic Gates

Module 3: Boolean Algebra

Module 4: Combinational Logic Circuits

Course Objective:

It is a fact that the students of this college have successfully completed their Higher Secondary and Secondary education, where ICT is a part of their curriculum. Yet some of our students are far behind when it comes to application of computer skills. This course is designed to up skill such students from first year UG classes to provide an understanding and practical experience of current software used at home and in the workplace.

Course Outcome:

1. To introduce student to basic concepts of digital logic
2. To introduce students to the design of basic logic circuits
3. To introduce students to some commonly used combinational and sequential circuit

Course Outline:

Duration: 30 hours

Module I

Digital Concepts: Introduction, Decimal numbers, Binary numbers, Decimal to binary conversions, Binary arithmetic, 1's and 2's complements of Binary numbers, Signed numbers, Arithmetic operations. Hexadecimal numbers, Octal numbers, Digital codes, Binary coded decimal (BCD).

Module II

Logic Gates: Positive and negative logic, NOT gate, AND gate, OR gate, NAND gate, NOR gate, EX-OR and EX-NOR gates.

Module III

Boolean Algebra: Boolean operations, logic expressions, rules and laws of Boolean algebra, DeMorgan's theorems, Boolean analysis of logic circuits, Simplification using Boolean algebra, Standard forms, SOP and POS Expressions, Karnaugh map techniques SOP.

Module IV

Combinational Logic Circuits: Implementation, Universal property of NAND and NOR gates, Half adder, Full adder, Parallel binary adder, Comparators, Decoders,

Books and references:

- 1.M. Morris Mano, Michael D. Ciletti, "Digital Design", Pearson, 2013.
- 2.Thomas L Floyed "Digital Fundamentals:, Pearsons 2007.