MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY
BHOPAL - 462003

Name of Program **B. Tech. CSE** **Semester III** **Year II**

Name of Course Digital Circuit Design

Course Code CSE 214

Core / Elective / Other Core

Course Outcomes:

On successful completion of the course, students should be able to

1. Explore number system used in computer system.
2. Identify the logic gates and their implementation.
3. Develop combinational circuits e.g. multiplexer, decoder, parallel adder and subtracter.
4. Perform the processing and implementation of sequential circuits.

Description of Contents in brief:

1. Number system, radix conversion, Binary codes, Floating point format
2. Boolean algebra, Logic gates, simplification of Boolean expressions
3. Combinational circuit: Full and half adder, Full and half subtracter, Parallel adder and subtracter, BCD adder, Excess 3 adder, Magnitude comparator, Look ahead carry generator, Multiplexer and De-multiplexer, Encoder and Decoder
4. Sequential circuits: Flip-Flop, Designing of sequential circuit, Minimization of sequential circuit, Synchronous and Asynchronous system, Synchronous Counter Designing, Asynchronous Ripple counter
5. Registers, Shift registers, Serial and parallel registers, Johnson and ring counter.

List of Text Books:

1. Digital Electronics by Morris Mano

List of Reference Books:

1. Digital Circuits & Design by Arivazhagan S Salivahanan
2. Fundamentals of Digital Logic with VHDL Design by Stephen Brown