### DIGITAL ELECTRONICS CIRCUITS EC (EE)-302 Credit: 3 Contact: 3L

#### Module1

Data and number system: Binary, Octal and Hexadecimal representation and their conversion, BCD, ASCII, EBDIC, Gray codes and their conversion, Signed binary numbers representation with 1's and 2's complement methods, Binary arithmetic. [5]

### Module 2

Boolean algebra: Various logic gates and their truth tables and circuits, Representation in SOP and POS forms, Minimization of logic expressions by algebraic method, K-map method. [5]

# Module 3

Combinational circuits: Adder and sub tractor circuit, Circuit of Encoder, Decoder, Comparator, Multiplexer, De-Multiplexer and parity Generator. [5]

## Module 4

Memory systems: RAM, ROM, EPROM, EEROM [4]

### Module 5

Sequential circuits: Basic memory elements, S-R, J-K, D, and T Flipflop, various types of Registers, Counters & their design, Irregular counter, State table & State transition diagram, Sequential circuit design methodology. [6]

### Module 6

Different types of A/D and D/A conversion techniques. [4]

### Module 7

Logic families: TTL, ECL, MOS & CMOS, their operation and specification. [5]