I YEAR SEM-1 B.Tech CSE	CORE	L	T	P	C
CODE:EC1107	DIGITAL LOGIC DESIGN	2	2	0	4

UNIT-I

Binary System: Digital Systems, Binary numbers , Number Base Conversion: Octal & Hexadecimal Numbers, 1's & 2's Complements , Signed Binary Numbers, Binary codes.

UNIT-II

Boolean Algebra and Logic Gates: Boolean algebra, logic gates, and switching functions, truth tables and switching expressions, minimization of completely and incompletely specified switching functions, Karnaugh map and Quine-McCluskey method, multiple output minimization, representation and manipulation of functions using BDDs, two-level and multi-level logic circuit synthesis.

UNIT-III

Combinational Logic Circuits: Realization of Boolean functions using NAND/NOR gates, Binary Adder-sub tractor, Decimal Adder, Binary Multiplier, Magnitude ComparatDecoders, or, multiplexers.

UNIT-IV

Sequential Circuits: Clocks, flip-flops, latches, counters and shift registers, finite-state machine model, synthesis of synchronous sequential circuits, minimization and state assignment, asynchronous sequential circuit synthesis.

UNIT-V

ASM Charts: Representation of sequential circuits using ASM charts, synthesis of output and next state functions, data path control path partition-based design.

UNIT-VI

Memory: Random Access memory, types of ROM, Memory decoding, address and data bus, Sequential Memory, Cache Memory, Programmable Logic Arrays, memory Hierarchy in terms of capacity and access time.

TEXT BOOKS:

1. Digital Design- M. Morris Mano.

REFERENCE BOOKS:

1. Switching and Finite Automata Theory by Zvi. Kohavi, Tata McGraw Hill.
2. Switching and Logic Design, C.V.S. Rao, Pearson Education.
3. Digital Principles and Design – Donald D.Givone, Tata McGraw Hill, Edition.
4. Fundamentals of Digital Logic & Micro Computer Design , 5TH Edition, M. Rafiquzzaman John Wiley.