

SYLLABUS :-

Switching Circuits: Logic families: TTL, nMOS, CMOS, dynamic CMOS and pass transistor logic (PTL) circuits, inverters and other logic gates, area, power and delay characteristics, concepts of fan-in, fan-out and noise margin.

Switching theory: 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.

Combinational logic circuits: Realization of Boolean functions using NAND/NOR gates, Decoders, multiplexers. logic design using ROMs, PLAs and FPGAs. Case studies.

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.

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