DIGITAL LOGIC SYLLABUS

S.No	CONTENT	HOURS	REMARKS
1.	BINARY SYSTEMS · Digital Systems · Analog and Digital Signal · Binary Numbers · Number-base Conversions · Octal and Hexadecimal Numbers · Complements · Signed Binary Numbers · Binary Codes · Binary Storage and Registers · Binary Logic · Integrated Circuits	7	
2.	BOOLEAN ALGEBRA AND LOGIC GATES · Binary Logic · Switching Circuits and Binary Signals · Basic Logic Gates · Graphic Symbols · Timing Diagram · Boolean Algebra · Rules in Boolean Algebra Commutative Laws Associative Laws Distributive Law · Basic Theorems and Properties of Boolean Algebra · Operator Precedence · Universal Gates · IC Digital Logic Families · Propagation Delay	9	Presentation
3.	SIMPLIFICATION OF BOOLEAN FUNCTIONS · SOP and POS · K-Map Two Variable Map Three Variable Map Four Variable Map · NAND and NOR Implementation · Canonical and Standard Forms · Truth Tables	9	

4.	COMBINATIONAL LOGIC · Introduction to combinational Circuit · Design Procedure · Code Conversion · Analysis Procedure · Obtaining Truth-Table from Logic Diagram · NAND, NOR and Ex-OR Circuits	6	
5.	COMBINATIONAL LOGIC WITH MSI and LSI · Introduction to MSI and LSI · Adder Binary Adder Decimal Adder BCD Adder · Magnitude Comparator · Encoder and Decoders · Multiplexers · Types of ROM · Programmable Logic Array (PLA)	8	Presentation
6.	SEQUENTIAL LOGIC · Introduction to Sequence · Flip-Flops · Point · Edge-Triggered Flip-Flop · Analysis of Clocked Sequential Circuits	9	
7.	REGISTERS, COUNTERS and MEMORY UNITS · Registers · Ripple Counters · Binary Ripple Counters · Synchronous Counters · Timing Sequences · Johnson Counter · Memory Unit (RAM)	8	Presentation

LAB PREPARATION

S.No	Content
1.	To verify Truth table of basic logic gates and their realization using Universal Gates
2.	To verify De-Morgan's Theorem using two input variables.
3.	To verify Truth tables and construct Adder circuits using logic gates.
4.	To verify Truth tables and construct Encoder & Decoder circuits using logic gates.
5.	To verify Truth tables and Multiplexer and Demultiplexer circuits using logic gates.
6.	Counters(4-bit ripple counter)
7.	Flip-Flops (D and J-K)