Lecture Plan

Subject: **Digital Circuit & Computer Organization (CSC51102) [L-T-P = 3-1-0]**
Class: **I Semester M.Tech. (CA) & III Semester M.Sc. (M&C)**

Sl. No.	Name of the Topics	Number of Classes
1.	**Number Systems And Codes** (Introduction, Data Representation, Number System Conversion, Complements, Integer/Floating Point Representation, Weighted and Un-weighted Codes, Alphanumeric Codes, Binary Addition, Binary Subtraction, Error Detection and Correction)	3
2.	**Logic Gates** (Basic Gates, Universal Gates, Characteristics)	3
3.	**Boolean Algebra** (Introduction, Booleans Rules and Laws, DeMorgan's Theorem, SOP and POS Form of Boolean Expressions, K-Map, Quine McCluskey Method)	4
4.	**Combinational Circuits** (Introduction, Half/Full Adder, Half/Full Subtractor, Code Converter, Multiplexer, Demultiplexer, Encoder, Decoder)	3
5.	**Sequential Circuits** (Introduction, Flip-Flops, Counters)	3
6.	**Register Transfer and Micro-operations** (Register, Shift Register, Bus System (Multiplexer, Tri-State Buffer), Micro-operations (Arithmetic, Logic, Shift), Arithmetic Logic Shift Unit)	4
7.	**Faster Algorithms** (Booth Algorithm and Bit-Pair Recoding Method for Signed Operand Multiplication, Restoring and Non-Restoring Integer Division Method)	4
8.	**Basic Computer Organization and Design** (Process and Memory Interconnection, Instruction Codes, Instruction Cycle, Single-Bus Organization, Multiple Bus Organization, Addressing Modes)	3
9.	**Control Unit** (Hardwired and Micro-programmed)	3
10.	**Memory Organization** (Memory Hierarchy, Memory Types, Main Memory Architecture, Memory Address Map, Cache Memory, Virtual Memory, Paging, DMA)	5
11.	**Input-Output Organization** (Introduction, I/O Versus Memory Bus, Asynchronous Data Transfer, Modes of Transfer (Programmed I/O, Interrupt-Initiated I/O, DMA))	5
	TOTAL	**40**