LESSON PLAN

Name of Teacher: Vivek Sheel Verma
Name of subject: Digital Electronics

Branch: Electrical Engg.
Semester: 4th

Week	Chapters Covered	Topic Covered	Refrence
1st	1	**Introduction** Analog Signal, Digital Signal, Difference between Analog & Digital Signal, Applications & Advantages of Digital Signal	Fundamentals of Digital Circuits by A. Anand Kumar, PHI Publications
2nd	2	**Number System** Binary, Octal, & Hexadecimal number systems, Conversion from Decimal, Octal & Hexadecimal Systems to Binary System & Vice Versa.	Fundamentals of Digital Circuits by A. Anand Kumar, PHI Publications
3rd	2	Binary Addition, Subtraction, Multiplication, Division, 1's and 2's compliment methods of subtraction. - Concept of code: 8421, BCD, Excess 3 and Gray Code - Concept of Parity	Fundamentals of Digital Circuits by A. Anand Kumar, PHI Publications
4th	3	**Logic Gates & Families** - Logic symbol, logical expression and truth table of AND, OR, NOT, NAND, NOR, EX- OR gates, -Universal property of NAND and NOR gate. - Logic Simplification Circuits-Basic laws of Boolean algebra, Duality theorem, De Morgan's Theorems.	Digital Electronics by Vipan Arora, Eagle's Publication Jullundhar
5th	3	Boolean expressions using Sum of Products (SOP) and Product of Sums (POS) forms. - K-map representation of logical functions. - Minimization of logical expressions using K-map (2, 3, 4 variables). -Logic Gates & Families (SSI, MSI, LSI, VLSI, ULSI)	Digital Electronics by Vipan Arora, Eagle's Publication Jullundhar
6th	4	**Arithmetic Circuits** - Half Adder/Full Adder Circuit, their design and implementation - Half Subtracter /Full Subtracter Circuit, their design and implementation	Digital Electronics by Pratima Manhas & Shaveta Thakral, KATSON Publication, New Delhi
7th	5	**Decoder, Encoder, Multiplexer & De-Multiplexer** - Basic binary decoder, Encoder-Decimal to BCD Encoder	Digital Electronics by Pratima Manhas & Shaveta Thakral, KATSON Publication, New Delhi
8th	4	Block diagram, Truth table, Logical expression and logic diagram of Multiplexers (4:1 and 8:1). - Block diagram and Truth table of Demultiplexer (1:4 and 1:8)	Digital Electronics by Pratima Manhas & Shaveta Thakral, KATSON Publication, New Delhi
9th	6	**Flip Flops, Counters, Shift-Registers** -One-bit memory cell, clock signal, Latch-SR Latch, Difference between Latch & Flip-Flop -Flip Flops: S-R Flip flop, D- Flip Flop, J-K Flip Flop, Master Slave Flip-Flop, T- Flip Flop	Fundamentals of Digital Circuits by A. Anand Kumar, PHI Publications

10th	6	Counters: Asynchronous Counters/Ripple Counter (2 bit, 3-bit, Decade) : Synchronous Counters (2-bit, 3-bit, decade synchronous counter), Ring Counter	Fundamentals of Digital Circuits by A. Anand Kumar, PHI Publications
11th	6	Shift Registers: Concept of Shift registers, Types of Shift registers (SISO, SIPO, PISO, PIPO and Universal Shift Registers) - Applications of Flip-Flops, Counters & Shift Registers	Fundamentals of Digital Circuits by A. Anand Kumar, PHI Publications
12th	7	**Memories** Classification of Memories RAM, ROM, PROM, EPROM, E2PROM, Cache Memory, Static and Dynamic RAM	Digital Electronics by Vipan Arora, Eagle's Publication Jullundhar
13th	8	**D/A & A/D Converters** - Digital to Analog Converters (Weighted register, R-2R Ladder D/A Converter	Digital Electronics by Vipan Arora, Eagle's Publication Jullundhar
14th	8	Analog to Digital Converter (Dual Slope method, Successive Approximation A/D Converter) - Applications of A/D & D/A Converter	Digital Electronics by Vipan Arora, Eagle's Publication Jullundhar

Prepared By

VIVEK SHEEL VERMA