Lesson Plan

Name of the Faculty :

Discipline : Electrical Engineering

Semester : 3th Semester

Subject : Analog and Digital Electronics

Lesson Plan Duration : 13-15 Week

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
	1	Concept of insulators, conductors and semiconductors	1	To Plot V-I characteristics of a PN junction diode, To Plot V-I characteristics of a Zener diode, Observe the output of waveform:
	2	Intrinsic and extrinsic semiconductor	2	Half-wave rectifier circuit using one diode, Full-wave rectifier circuit using two diodes
	3	P and N type semiconductor and their conductivity	3	Observe the output of waveform of Bridge-rectifier circuit using four diodes.
	4	Effect of temperature on conductivity of intrinsic semiconductor	4	Plotting of input and output characteristics and calculation of parameters of transistors in CE configuration., Plotting of input and output characteristics and calculation of parameters of transistors in CB configuration
	5	PN junction diode, mechanism of current flow in PN junction	5	To study weighing machine using load cell
	6	Forward and reverse biased PN junction, potential barrier	6	Plotting of V-I characteristics of a FET
	7	Drift and diffusion currents, depletion layer	7	Basic logic operations of AND, OR, NOT gates
	8	V-I characteristics of diodes	8	Verification of truth tables for NAND, NOR and Exclusive OR (EX-OR) and Exclusive NOR (EX-NOR) gates
	9, 10	Diode as half-wave, full wave and bridge rectifiers, Peak Inverse Voltage, rectification efficiencies and ripple factor calculations	9	Realization of logic functions with the help of NAND or NOR gates.
	11	Concept of filters,	10	To design a half adder using

				XOR and NAND gates and verification of its operations.
	12	Types of diodes, characteristics and applications of Zener diodes	11	Construction of a full adder circuit using XOR and NAND gates and verify its operation
	13	Concept of a bipolar transistor, PNP and NPN transistors, CB, CE, CC configurations of a transistor	12	Verification of truth table for IC flip-flops (At least one IC each of D latch, D flip-flop, JK flip-flops)
	14, 15, 16	Transistor as an amplifier in CE Configuration, Current amplification factors, Comparison of CB, CE and CC Configurations	13	Verification of truth table for encoder and decoder ICs. Verification of truth table for Mux and De-Mux
	17, 18	Construction, operation and characteristics of FETs, FET as an amplifier		
	19	Construction, operation and characteristics of a MOSFET, Comparison of JFET, MOSFET and BJT		
	20	Distinction between analog and digital signal. Decimal, Binary, octal and hexadecimal number system		
	21, 22, 23	Conversion from decimal and hexadecimal to binary and vice-versa, Binary addition and subtraction		
	24,25	Sequential Circuits such as Half adder, Full adder		
	26	Mux, De-Mux, Encoder and Decoder		
	27,28	Combinational Circuits like Latch, Flip Flops, shift registers and counters		
	29,30	A/D and D/A Converters and its Applications		