

NAME OF FACULTY : Ms. Monika Gautam  
 DISCIPLINE : Applied Science & Humanities  
 SEMESTER : 1st  
 SUBJECT : Basics of electronics engg.

WORK LOAD (LECTURE/PRACTICAL)PER WEEK (IN HOURS) : 4 LECTURE, 2 PRACTICAL

WEEK	THEORY		PRACTICAL	
	Lecture Day	Topic (Including Assignment/Test)	Practical Day	Topic
1st	1st	Semiconductor Diodes: Active Components (Current & Voltage Sources)	1st	Identification, Specifications, Testing of R, L, C Components (Colour Codes), Potentiometers, Switches (SPDT, DPDT and DIP), Bread Boards, Diodes, BJTs, JFETs, MOSFETs, Power Transistors, SCRs and LEDs.
	2ND			
	3RD	Passive Electronic components (Resistors, Capacitors & Inductors)		
	4TH	concept of P-N diode		
2nd	1st	Diode Equivalent Circuits	2nd	Study the operation of Digital Multi Meter, Function / Signal Generator, Regulated Power Supply (RPS), Cathode Ray Oscilloscopes; Amplitude, Phase and Frequency of Sinusoidal Signals on CRO.
	2ND	Load Line Analysis,		
	3RD	Diode as a Switch		
	4TH	Breakdown Mechanisms		
3rd	1st	Zener Diode: Operation and Applications	3rd	To study & perform the Experimental Verification of V-I characteristics of PN-diode in forward and reverse bias & study of various parameters of diode like threshold
	2ND			
	3RD	Rectifiers: Half Wave		
	4TH	Full Wave Rectifiers,		
4th	1st	Photo Diode and Applications	4th	To study & perform the Experimental Verification of Half-Wave & Full-Wave Rectifier and calculate its ripple factor, efficiency and PIV
	2ND			
	3RD	<b>unit 1st test</b>		
	4TH	Bipolar Junction Transistor:		
5th	1st	Different Types of Transistors,	5th	To study & perform the Experimental Verification of Zener Diode as a Voltage Regulator and calculate its parameters
	2ND	basic operation of a transistor		
	3RD	Amplifying Action of BJT		
	4TH	Input and Output Characteristics of Common Base (CB),		
6th	1st	Common Collector (CC) and Common Emitter (CE) Configurations	6th	To study & perform the Experimental Verification of the input and output characteristics of BJT in common-emitter configuration & calculate all its parameters
	2ND			
	3RD	Operating Point		
	4TH	Transistor as a switch and amplifier		
7th	1st	Biasing: Fixed Bias, Self Bias	7th	To study & perform the Experimental Verification of Op-Amp as Inverting, NonInverting, Differential amplifier & calculate its Voltage gain.
	2ND	Voltage Divider Bias		
	3RD	Concept of Feedback in amplifiers.		
	4TH	Advantages of negative feedback. Oscillators		
8th	1st	Oscillators:	8th	To study & perform the Experimental Verification of Summing and Difference amplifier & calculate its Voltage gain
	2ND	Barkhausen criterion for oscillations		
	3RD	<b>unit 2nd test</b>		
	4TH	Operational Amplifier: Basic Block Diagram		
9th	1st	Equivalent Circuit	9th	To study & perform the Experimental Verification of the I-V characteristics of JFET and MOSFET & calculate all its parameters
	2ND	Characteristics of Ideal Op-Amp		
	3RD	Concept of Virtual Short		
	4TH	deal Op-Amp vs Practical Op-Amp		
10th	1st	Configurations of Op-Amp: Inverting, Non-	10th	Simulation of simple electronic circuits and

	2ND	Inverting	analyzing its input and output wavetforms using any of EDA tools
	3RD	Differential filters,	
	4TH	Parameters of Op-Amp: Bandwidth, Slew Rate	
11th	1st	Gain, CMRR , PSRR, Input offset voltage,	
	2ND	Output offset voltage	
	3RD	Op-Amp Applications: Summing and Difference Amplifiers	
	4TH	Integrator	
12th	1st	Differentiator	
	2ND	<b>unit 3rd test</b>	
	3RD	Special Semiconductor Devices	
	4TH	concept of n-MOSFET	
13th	1st	p-MOSFET and C-MOSFET	
	2ND	Operation and I-V Characteristics of enhancement	
	3RD	depletion MOSFET,	
	4TH	DIAC: Characteristics	
14th	1st	Operation and Applications	
	2ND		
	3RD	UJT: Characteristics	
	4TH	Operation and Applications	
15th	1st	TRIAC: Characteristics, Operation and Applications	
	2ND	SCR: Characteristics, Operation and Applications	
	3RD		
	4TH	<b>Unit 4 test</b>	

