SAMRAT ASHOK TECHNOLOGICAL INSTITUTE												
		(Engineering College), VIDISHA M.P.										
and a card		(An Autonomous Institute Affiliated to RGPV Bhopal)										
Department of Electric							rical Eng	ineer	ing			
Semeste	r/Year						h					
Subjec		Subject	Subjec			t	Pa	aia Elaat	ronio			
Categor							lionic	.5				
	Maximum Marks Allotted Contact H								ure			
	Theor	у			ractical		Total	Conta		Juis	Total	
End Ser	m Mid-Sem	Quiz	Ass	End Sem	LW	quiz	Marks	L	Т	Р	Credits	
60	20	10	10				100	3	-	-	3	
Prerequi		Pooio lour		otrical on ai	nooring	and their	ir application					
	ductor devices	s, basic laws		cincal engli	neering a	and the	ir application.					
	ents will be ab	le to,										
•	The objective	of the subje					mportance of E					
							its, their charac					
	clipping a clar			jain amplifi	ier, spec	al dio	de, diode as	a rectifie	er dio	de ap	plication	
	To develop th			electronic	circuits.							
	Students will I					f the po	wer amplifier.					
•	To introduce r	negative feed	dback/p	positive fee	dback ge	enerato	or of waveform of					
					Need of	f differe	ent amplifiers, o	calculatio	on of a	commo	on mode	
gain and common mode rejection ratio.												
Course Outcomes: After completing the course, the students will be able to												
CO1 - Acquire knowledge and able to demonstrate construction, working principle, characteristics, different												
	arameters rela								(T			
	cquire knowled						racterstic and c	lesigning	ofir	ansist	ors.	
CO4 – illustrate different types of oscillators, working and applications. CO5 – Able to apply the knowledge of different regulator and applications.												
UNITs	Descriptions Hrs. CO's									CO's		
1	Review of P-N junction diode, I-V characteristics of a diode; half-wave and full-wave restifiers. Zener diode, Variater diode, INI diode, LED, Photo diode, Tunnel diode, CO1,C									CO1,C		
	rectifiers, Zener diodes, Varactor diode, PIN diode, LED, Photo diode, Tunnel diode, 8 O3									O3		
	Structure and I-V characteristics of a B IT: B IT as a switch B IT as an amplifier: DC-									CO1,		
П	AC Load line, biasing methods, current mirror; common-emitter, common-base and 10								CO2,			
	common collector amplifiers; Hybrid parameter transistors, Field Effect Transistor, UJT										CO3	
Power amplifiers, class A, class B, class AB efficiency and power dissingtion Push								001				
Pull amplifier complimentary push pull amplifier concept of feedback amplifier							ier,	6	CO1, CO2,C			
	negative feedback, and its advantages, voltage series, voltage shunt, current series and current shunt feedback amplifier.											
					al oscilla	tors cir	cuit I-C (Hart	lev-Colni	tts)			
	Barkhausen criteria of oscillator Sinusoidal oscillators circuit, L-C (Hartley-Colpitts) oscillators, RC phase shift, Wien Bridge, and Crystal oscillators. Switching								001			
characteristics of diode and transistor, transistor as switch, Multivibrators, Bistable,							ole,	7	CO1, CO2,			
10	Monostable, Astablemultivibrators, Direfemilar ampliner, calculation of direfemilar,								CO3			
	common mode gain and CMRR. Darlington pair, Boot strapping technique, 555 Timer.											
De Regulated Power Supplies : Introduction Voltage Regulator , Types of Voltage												
	Regulators	, Zener Die	ode Sl	hunt Regu	lator, \	Working	g of Zener D	iode Sh	unt		CO3,	
V	V Regulator, Optimum Value of Current Limiting, Disadvantages of Zener Diode 9 Resistor ,Shunt Regulator , Transistor Shunt Regulator , Transistor Series							CO4				
	Resistor ,S Regulator.	nunt Regul	ator,	iransistoi	Snunt	Regu	iator , Transi	stor Ser	nes			
Guest Lectures (if any)												
	Total Hours 40											
	ve list of expe	riments:										
NA												

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Text Book-

- Electronic Devices and Circuits by R.S.Sheda, S.Chand.
- Electronic Devices and Circuits by Millman & Halkias, Mcgraw-hil
- Electronic Devices and Circuits theory by Robert Boysted, PHI
- Electronic Devices and Circuits by J.B.Gupta, S.K.Kataria & Sons.

Reference Books-

- Achuthan MA and Bhatt KN; Fundamentals of semiconductor devices; TMH
- Neamen Donald; Semiconductor Physics and devices
- Bogart; Electronic Devices and Circuits; Universal Book Stall, New Delhi
- R.A. Gaikward; OP- Amp and linear Integreted circuit; PHI
- I.J. Nagrath; Electronics -Analog and Digital; PHI

Modes of Evaluation and Rubric

Theory	Attendance (5)	Midsem (10)	Performance (5)	Total (20)			
-	Attendance (5)	Assignmet (5)	-	Total (10)			
		Quiz (10)	-	Total (10)			
List/Links of e-learning resource							
• NP	TEL						
Recommendation by Board of studies on			14/6/22				
Approval by Academic council on			16/6/22				
Compiled ar	nd designed by	Pro	Prof. Deepti Jain				
Subject handled by department			Electrical Engg. Dept.				



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Storet .	and the second s	(An Autonomous Institute Affiliated to RGPV Bhopal)														
Department of Electrical Engineering																
Semester/Y	'ear	11/1		Prog	ram			B.Te								
Subject Category	Subject ESC Subject EE				L110 Subject Elec				cal & Electronics Workshop							
Maximum Marks Allotted Contact Hours								Total								
End Sem	Theo Mid-Se		z As	End Se	Practical m LW	Quiz	Total z Marks	L	т	Р	Credits					
-	sg		30	10	10	50	1	-	2	2						
Prerequisite			0. 0				0									
hysics, Ba	ISIC SYMDO	ols of R,L,0	C, Basic I	knowledge	e of Elect	ronics	Components.									
Course Obj	ective:															
		nocializor	d mannou	wor for olo	ctrical pa	wor on	nd energy indus	tr)/								
							in emerging are		ectrics	1 & F	lectronics					
	gineering.		in s cape	only by or	lening pro	Jecis I	in energing are		CUIIC							
			perspec	tive towa	ırds envii	onmer	ntal issues by	sensitiz	ina ar	nd bu	ildina the					
		of green te					,		5		- J					
		0	0													
ourse Out																
					earn the	basic	of Soldering,	wiring,	differe	nt ele	ectrical &					
		elements, l			antina fu		ata									
		nowledge							ب بنام ما ا	منابات	a. a.a.d. ita					
CU3. AC	quire the	Such as	e and ab				fferent type of g etc. useful	motors,		ond	domostio					
	ildings.	Such as	stall ca	se winng	, a 10011	winng	g etc. userui	n comm	ierciai	anu	aemostic					
		different t	vnes of t	estina on a	startar an	d now	er circuits.									
							timer and their	applicati	ons.							
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UNITs	Descriptions Hrs. CO's															
I	Introduction of tools, electrical materials, symbols and abbreviations. 2 Familiarization of various types of service mains - wiring installations - 3 1,2,3															
accessories and household electrical appliances. Importance of Neutral and Grounding and exposure to various earthing																
	schemes Realization of different types of wiring systems like tube light									3	4.0.5					
II	wiring, staircase wiring along with the protection elements like fuse, MCB,										1,2,3					
	ELCB etc.															
	Assembling and dissembling of D. C. Machine, single phase motor and its															
ш	meggering. Assembling and dissembling of single phase transformer and its															
	meggering Different faults in domestic appliances like automatic iron,									3	1,2,3					
	mixture, Oven, washing machine and repairing of the same. Application of										1,2,3					
	Tester and Test Lamp for fault finding in Electrical Systems 8 Introduction to															
		d STAR-D						-								
	Application of Tester and Test Lamp for fault finding in Electrical Systems 8															
IV Introduction to DOL and STAR-DELTA starter with power circuit and its							its	3	1,2,3							
	control circuit Calibration of Energy meter															
						V-I characteristics of P-N junction diode and Zener diode, Light Emitting										
V	alode, g	gain and fi	requency		oscillato			diode, gain and frequency of Colpitt oscillator, gain and frequency of Hartley								
V		oscillator, performance of IC 555 timer in Astable, Mono stable, Bistable								3	100					
		mode, zener diode as a voltage regulator, sine wave, square wave and Triangular wave on the CRO, characteristics of Field Effect Transistor (FET).									1,2,3					
LIDET L DOTI	l manyu				regulator,	r, gain Astable sine	and frequency e, Mono stabl wave, square	e, Bistat wave a	nd	5	1,2,3					
	ires (if any	lar wave c			regulator,	r, gain Astable sine	and frequency e, Mono stabl wave, square	e, Bistat wave a	nd	5	1,2,3					
	ures (if any	lar wave c			regulator,	r, gain Astable sine	and frequency e, Mono stabl wave, square	e, Bistat wave a	nd	5	1,2,3					
otal Hours		lar wave c			regulator,	r, gain Astable sine	and frequency e, Mono stabl wave, square	e, Bistat wave a	nd).	15	1,2,3					
otal Hours	S	lar wave c y)			regulator,	r, gain Astable sine	and frequency e, Mono stabl wave, square	e, Bistat wave a	nd).		1,2,3					

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 Make a circuit for one lamp controlled by one switch with PVC surface conduit system. 									
	Make a circuit for two lamps controlled by two switches with PVC surface conduit system.								
 Make a circuit for one lamp controlled by one 	Make a circuit for one lamp controlled by one switch and provision of 2/3 pin socket.								
 Make a circuit for stair case wiring. 	Make a circuit for stair case wiring.								
 Make a circuit for godown wiring. 	Make a circuit for godown wiring.								
• Make a circuit for electrical bell connection.									
• Make a circuit for ceiling fan with regulator									
 Make a circuit for series connection of lamps 	Make a circuit for series connection of lamps								
-	Make a circuit for parallel connection of lamps								
MCB Connection									
Energy meter connection and calculation									
 Electricity bill calculation and analysis of bill of your on home. 									
 Identify the sine wave, square wave and Triangular wave on the CRO & measure voltage & 									
frequency of the wave forms.(C01)									
 To draw V-I characteristics of P-N junction d 	iode and Zener diode (C02)								
 Design the circuit using zener diode as a vol 									
 Evaluate performance of transistor for difference 	5								
 To draw characteristics of field effect transis 									
 To draw V-I characteristics of Light Emitting 									
Determine the frequency of oscillation of wien's bridge oscillator.(C03)									
Determine gain and frequency of Colpitt oscillator. (C03)									
Determine gain and frequency of Hartley oscillator. (C03)									
Evaluate performance of IC 555 timer in Astable, Mono stable, Bistable mode (C03)									
Text Book-									
Electrical Engineering Drawing & Design by C R Dargan.									
Electronic Devices and Circuits theory by Robert Boysted, PHI									
Electronic Devices and Circuits by J.B.Gupta, S.K.Kataria & Sons. Reference Books-									
Workshop Electrics by Alex Weiss									
Modes of Evaluation and Rubric									
Practical Attendance (5) Viva/lab performance (15) Total (20)									
List/Links of e-learning resource									
•									
Recommendation by Board of studies on	14/6/22								
Approval by Academic council on	16/6/22								
Compiled and designed by	Prof. Deepti Jain / Prof. Anusha Lahoti								
Subject handled by department	Electricla Engg. Deptt.								

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