DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

ACADEMIC LESSION PLAN FOR WINTER SEMESTER 2023-24	
JHARSUGUDA ENGINEERING SCHOOL,JHARSUGUDA	
Name of the Faculty: RASHMITA BADHAI	Academic Year:2023-24
Course No.: TH-3	Course Name: CIRCUIT THEORY
Program: Diploma	Branch: ETC
Year/Sem: 2nd/3rd	Section:
Total Period s : 60 P/ Sem	End Semester Exam : 80marks
Internal Assessment : 20 Marks	TOTAL MARKS :100 Marks

Sl. No.	Period	Time (min)	Unit/ Chapter	Topic to be covered	Teaching method
1.	1.	55	1	Circuit elements (Resistance, Inductance, Capacitance), Scope of network analysis & synthesize	Black board
2.	2.	55		Voltage Division & Current Division, Energy Sources	Black board
3.	3.	55		Electric charge, electric current, Electrical energy, Electrical potential, R-L-C parameters, Active& Passive Elements.	Black board
4.	4.	55		Energy Sources, Current and voltage sources and their transformation & mutual inductance	Black board
5.	5.	55		Star – Delta transformation	Black board
6.	6.	55		Nodal Analysis of Electrical Circuits with simple problem.	Black board
7.	7.	55		Mesh Analysis of Electrical Circuits with simple problem.	Black board
8.	8.	55	2	Voltage Division & Current Division, Energy Sources	Black board
9.	9.	55		Norton's Theorem	Black board
10.	10.	55		Maximum Power transfer Theorem,Solve numerical problems of above.	Black board
11.	11.	55		Superposition Theorem,Solve numerical problems of above.	Black board
12.	12.	55		Millman Theorem,Solve numerical problems of above.	Audio visual smart class

13.	13.	55		Thevenin's Theorem,Solve numerical problems of above.	Black board
14.	14.	55		Reciprocity Theorem-Statement,Explanation & applications.	Black board
15.	15.	55		Definition of frequency, Cycle, Time period, Amplitude, Average value, RMS value, Instantaneous power & Form factor, Apparent power, Reactive power, power Triangle of AC Wave	Black board
16.	16.	55		Phasor representation of alternating quantities .	Black board
17.	17.	55	3	Single phase Ac circuits-Behaviors of A.C. through pure Resistor, Inductor & Capacitor	Audio visual smart class
18.	18.	55		Single phase Ac circuits-Behaviors of A.C. through pure Resistor, Inductor & Capacitor	Black board
19.	19.	55		Single phase Ac circuits-Behaviors of A.C. through pure Resistor, Inductor & Capacitor	Black board
20.	20.	55		DC Transients-Behaviors of R-L, R-C, R-L-C series circuit & draw the phasor diagram and voltage triangle	Black board
21.	21.	55		DC Transients-Behaviors of R-L, R-C, R-L-C series circuit & draw the phasor diagram and voltage triangle	Black board
22.	22.	55		Define Time Constant of the above Circuit	Black board
23.	23.	55		Solve numerical simple problems of above Circuit	Black board
24.	24.	55		Introduction to resonance circuits & Resonance tuned circuit	Black board
25.	25.	55		Series resonance	Black board
26.	26.	55		Parallel resonance	Black board
27.	27.	55	4	Expression for series resonance, Condition for Resonance, Frequency of Resonance, Impedance, Current, Voltage, power,	Black board
28.	28.	55			Black board
29.	29.	55		Q Factor and Power Factor of Resonance, Bandwidth in term of Q.	Black board
30.	30.	55		Parallel Resonance (RL, RC& RLC)& derive the expression	Black board
31.	31.	55		Parallel Resonance (RL, RC& RLC)& derive the expression	Audio visual smart class
32.	32.	55		Comparisons of Series & Parallel resonance& applications	Audio visual smart class
33.	33.	55		simple problems of above Circuit	Audio visual smart class
34.	34.	55		Laplace Transformation,	Black board

35.	35.	55			Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-L.	Black board
36.	36.	55			Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-C.	Black board
37.	37.	55	5		Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-L-C.	Black board
38.	38.	55			Analysis and derive the equations for circuit parameters of Impulse response of R-L.	Black board
39.	39.	55			Analysis and derive the equations for circuit parameters of Impulse response of RC.	Black board
40.	40.	55			Analysis and derive the equations for circuit parameters of Impulse response of R-L-C	Black board
41.	41.	55			simple problems of above Circuit	Black board
42.	42.	55			simple problems of above Circuit	Audio visual smart class
43.	43.	55			simple problems of above Circuit	Black board
44.	44.	55	6		Network elements, ports in Network (One port, two port)	Black board
45.	45.	55			Network Configurations (T & pie).	Black board
46.	46.	55			Open circuit (Z-Parameter)& Short Circuit(Y-Parameter) Parameters-	Black board
47.	47.	55			Calculate open & short Circuit Parameters for Simple Circuits & its conversion	Black board
48.	48.	55			h- parameter (hybrid parameter) Representation	Black board
49.	49.	55			Define T-Network & pie-Network.	Black board
50.	50.	55			simple problems of above Circuit	Black board
51.	51.	55			simple problems of above Circuit	Black board
52.	52	55			Ideal &Practical filters and its applications	Black board
53.	53	55			, cut off frequency, passband and stop band.	Black board
54.	54	55			Classify filters- low pass, high pass, band pass, band stop filters & study their Characteristics.	Black board
55.	55	55			Classify filters- low pass, high pass, band pass, band stop filters & study their Characteristics.	Black board
56.	56	55	7		Butterworth Filter Design	Black board
57.	57	55			Attenuation and Gain, Bel , Decibel & neper and their relations.	Black board
58.	58	55			Attenuators& its applications.	Black board
59.	59	55			Classification-T- Type & PI – Type attenuators	Black board
60.	60	55			simple problems of above Circuit	Black board