



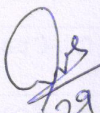
# GIET POLYTECHNIC, JAGATPUR, CUTTACK

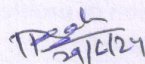
## LESSON PLAN

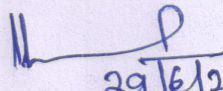
Discipline: ELECTRICAL	Semester: 5 <sup>th</sup>	Name Of The Teaching Faculty: SUDIPTA KUMAR DAS	
Subject: CIRCUIT & NETWORK THEORY (TH 2)	No. Of Days Per Week Class Allotted: 05 P (4p + 1 tutorial)	Semester From Date: 01.07.2024	To Date: 08.11.2024
		No. of weeks: 15	
Week	Class Day	Theory Topic	
1 <sup>st</sup> week	1 <sup>st</sup>	<u>UNIT 1 : MAGNETIC CIRCUIT</u>	
	2 <sup>nd</sup>	➤ 1.1 : Introduction	
	3 <sup>rd</sup>	➤ 1.2 : Magnetizing force , intensity, mmf , flux & their relations	
	4 <sup>th</sup>	➤ 1.3: Permiability, reluctance & permeance	
	5 <sup>th</sup>	➤ 1.4: Analogy between Electric & magnetic circuit	
2 <sup>nd</sup> week	1 <sup>st</sup>	➤ 1.4: Analogy between Electric & magnetic circuit	
	2 <sup>nd</sup>	➤ 1.5: B-H Curve	
	3 <sup>rd</sup>	➤ 1.6: Series & parallel magnetic circuit	
	4 <sup>th</sup>	➤ 1.7: Hysteresis loop	
	5 <sup>th</sup>	<u>UNIT 2 : COUPLED CIRCUIT</u>	
3 <sup>rd</sup> week	1 <sup>st</sup>	➤ 2.1: Self inductance & mutual inductance	
	2 <sup>nd</sup>	➤ 2.2: Conductivity & Coupled circuit & mutual impedance	
	3 <sup>rd</sup>	➤ 2.3: Dot convention	
	4 <sup>th</sup>	➤ 2.4: Coefficient of coupling	
	5 <sup>th</sup>	➤ 2.5: Series & parallel connection of coupled inductors	
4 <sup>th</sup> week	1 <sup>st</sup>	➤ 2.5: Series & parallel connection of coupled inductors	
	2 <sup>nd</sup>	➤ 2.6: Numerical problems	
	3 <sup>rd</sup>	➤ CLASS TEST	
	4 <sup>th</sup>	<u>UNIT 3: CIRCUIT ELEMENTS &amp; ANALYSIS</u>	
	5 <sup>th</sup>	➤ 3.1: Active , passive, unilateral & bilateral , linear & non linear elements	
5 <sup>th</sup> week	1 <sup>st</sup>	➤ 3.1: Active , passive, unilateral & bilateral , linear & non linear elements	
	2 <sup>nd</sup>	➤ 3.2: Mesh analysis , Mesh equations by inspection	
	3 <sup>rd</sup>	➤ 3.3: Super mesh analysis	
	4 <sup>th</sup>	➤ 3.4: Nodal analysis , nodal equation by inspection	
	5 <sup>th</sup>	➤ 3.5: Super node analysis	
6 <sup>th</sup> week	1 <sup>st</sup>	➤ 3.6: Source transformation techniques	
	2 <sup>nd</sup>	➤ 3.7: SOLVE NUMERICAL PROBLEMS( WITH INDEPENDENT SOURCE ONLY)	
	3 <sup>rd</sup>	➤ 3.7: SOLVE NUMERICAL PROBLEMS( WITH INDEPENDENT SOURCE ONLY)	
	4 <sup>th</sup>	<u>UNIT 4 : NETWORK THEOREMS</u>	
	5 <sup>th</sup>	➤ 4.1: Star to Delta & Delta to Star	
		➤ 4.2: Superposition theorem	
		➤ 4.2: Numerical problems on superposition theorem	

7 <sup>th</sup> week	1 <sup>st</sup>	➤ 4.3: Thevenin's theorem
	2 <sup>nd</sup>	➤ 4.3: Numerical problems on Thevenin's theorem
	3 <sup>rd</sup>	➤ 4.4: Norton' theorem
	4 <sup>th</sup>	➤ 4.4: Numerical problems on Norton's theorem
	5 <sup>th</sup>	➤ 4.5: Maximum power transfer theorem
8 <sup>th</sup> week	1 <sup>st</sup>	➤ 4.5: Numerical problems on Maximum Power Transfer theorem
	2 <sup>nd</sup>	➤ CLASS TEST
	3 <sup>rd</sup>	<u>UNIT 5 : AC CIRCUIT &amp; RESONANCE</u>
	4 <sup>th</sup>	➤ 5.1: AC through R-L,R-C & R-L-C circuit
	5 <sup>th</sup>	➤ 5.2: Solution problems of AC through R-L , R-C & R-L-C series circuit by complex algebra method
9 <sup>th</sup> week	1 <sup>st</sup>	➤ 5.2: Solution problems of AC through R-L , R-C & R-L-C series circuit by complex algebra method
	2 <sup>nd</sup>	➤ 5.3: Solution of problems of AC through R-L , R-C & R-L-C parallel & Composite Circuits
	3 <sup>rd</sup>	➤ 5.3: Solution of problems of AC through R-L , R-C & R-L-C parallel & Composite Circuits
	4 <sup>th</sup>	➤ 5.4: Power factor & Power triangle
	5 <sup>th</sup>	➤ 5.5: Deduce expression of active , reactive apparent power
10 <sup>th</sup> week	1 <sup>st</sup>	➤ 5.6: Derive the resonant frequency of series resonance and parallel resonance circuit
	2 <sup>nd</sup>	➤ 5.7: Define Bandwidth , Selectivity & Q-factor in series circuit
	3 <sup>rd</sup>	➤ 5.8: SOLVE NUMERICAL PROBLEMS
	4 <sup>th</sup>	<u>UNIT 6 : POLYPHASE CIRCUIT</u>
	5 <sup>th</sup>	➤ 6.1: Concept of poly-phase system and phase sequence
11 <sup>th</sup> week	1 <sup>st</sup>	➤ 6.2: Relation between phase and line quantities in star & delta connections
	2 <sup>nd</sup>	➤ 6.3: Power equation in 3-phase balanced circuit
	3 <sup>rd</sup>	➤ 6.4: Solve numerical problems
	4 <sup>th</sup>	➤ 6.5: Measurement of 3-phase power by two wattmeter method
	5 <sup>th</sup>	➤ 6.6: SOLVE NUMERICAL PROBLEMS
12 <sup>th</sup> week	1 <sup>st</sup>	<u>UNIT 7: TRANSIENTS</u>
	2 <sup>nd</sup>	➤ 7.1: Steady state response
	3 <sup>rd</sup>	➤ 7.1: Transient state response
	4 <sup>th</sup>	➤ 7.2: Response to R-L circuit under DC condition
	5 <sup>th</sup>	➤ 7.2: Response to R-C circuit under DC condition
13 <sup>th</sup> week	1 <sup>st</sup>	➤ 7.2: Response to R-L-C circuit under DC condition
	2 <sup>nd</sup>	➤ 7.3: SOLVE NUMERICAL PROBLEMS
	3 <sup>rd</sup>	<u>UNIT 8 : TWO-PORT NETWORK</u>
	4 <sup>th</sup>	➤ 8.1: Open circuit impedance (z) parameters
	5 <sup>th</sup>	➤ 8.2: Short circuit admittance (Y) parameters
14 <sup>th</sup> week	1 <sup>st</sup>	➤ 8.3: Transmission (ABCD) parameters
	2 <sup>nd</sup>	➤ 8.4: Hybrid (h) parameters
	3 <sup>rd</sup>	➤ 8.5: Inter relationships of different parameters
	4 <sup>th</sup>	➤ 8.6: T and $\pi$ representations
	5 <sup>th</sup>	➤ 8.7: SOLVE NUMERICAL PROBLEMS
14 <sup>th</sup> week	1 <sup>st</sup>	➤ CLASS TEST
	2 <sup>nd</sup>	<u>UNIT 9: FILTERS</u>
	3 <sup>rd</sup>	➤ 9.1: Define filter ➤ 9.2: Classification of pass Band, stop Band and cut-off frequency

	4 <sup>th</sup>	➤ 9.3: Classification of filters ➤ 9.4: Constant-k low pass filter
	5 <sup>th</sup>	➤ 9.5: Constant – k high pass filter
15 <sup>th</sup> week	1 <sup>st</sup>	➤ 9.6: Constant – K Band pass filter
	2 <sup>nd</sup>	➤ 9.7: Constant – K Band elimination filter
	3 <sup>rd</sup>	➤ 9.8: SOLVE NUMERICAL PROBLEMS .
	4 <sup>th</sup>	➤ REVISION
	5 <sup>th</sup>	➤ REVISION

  
 29.04.2024  
 Signature of faculty

  
 29/4/24  
 Signature of Sr. lecturer  
 Head of Dept. (HOD)  
 Electrical & ETC Engg.  
 G. E.T (POLY), ...

  
 29/4/24  
 Signature of principal