BHUBANANANDA ORISSA SCHOOL OF ENGINEERING,CUTTACK

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

SUBJECT : CIRCUIT AND NETWORK THEORY **ACADEMIC SESSION: 2024-25**

FACULTY : ER. PADMINI PRADHAN **SEMESTER:3RD ,SECTION:B**

Discipline: **Electrical Engg.**	Semester:**3rd (B)**	Name of the teaching faculty: **PADMINI PRADHAN**
Subject-Circuit & Network Theory**(TH-2)**	No. of Days/per week class allotted:**05 PERIODS/WEEK (MON-1,WED-2,THU-1.FRI-1,Period Each)**	Semester: From Date: **01/07/2024** To Date:**08/11/2023** No. of weeks: **18 WEEKS**
Week	**Class Day**	**Theory/Practical Topics**
1st (01/07/2024-06/07/2024)	01/07/2024	**1.MAGNETIC CIRCUIT** 1 .1 Introduction 1 .2 Magnetizing force, Intensity, MMF, flux and their relations
	03/07/2024	1 .3 Permeability, reluctance and permeance.
	03/07/2024	1 .4 Analogy between electric and Magnetic Circuits
	04/07/2024	1 .5 B-H Curve
	05/07/2024	1 .6 Series & parallel magnetic circuit.
2nd (08/07/2024-13/07/2024)	08/07/2024	1 .7 Hysteresis loop
	10/07/2024	**2.COUPLED CIRCUIT** 2 .1 Self Inductance and Mutual Inductance
	10/07/2024	2 .2 Conductively coupled circuit and mutual impedance
	11/07/2024	2 .3 Dot convention
	12/07/2024	2 .4 Coefficient of coupling 2 . 5 Series and parallel connection of coupled inductors.
3rd(15/07/2024-20/07/2024)	15/07/2024	2 . 6 Solve numerical problems
	18/07/2024	2 . 6 Solve numerical problems

	19/07/2024	**3. CIRCUIT ELEMENTS AND ANALYSIS:** 3 . 1 Active, Passive, Unilateral & bilateral, Linear & Non linear elements
4th (22/07/2023-27/07/2024)	22/07/2024	3 . 2 Mesh Analysis, Mesh Equations by inspection
	24/07/2024	3 . 3 Super mesh Analysis
	24/07/2024	3 . 4 Nodal Analysis, Nodal Equations by inspection
	25/07/2024	3 . 5 Super node Analysis.
	26/07/2024	3 . 6 Source Transformation Technique
5th (29/07/2024-03/08/2024)	29/07/2024	3 . 7 Solve numerical problems (With Independent Sources Only)
	31/07/2024	3 . 7 Solve numerical problems (With Independent Sources Only)
	31/07/2024	3 . 7Solve numerical problems (With Independent Sources Only)
	01/08/2024	3 . 7Solve numerical problems (With Independent Sources Only)
	02/08/2024	3 . 7Solve numerical problems (With Independent Sources Only)
6th (05/08/2024-10/08/2024)	05/08/2024	**4. NETWORK THEOREMS:** 4.1 Star to delta and delta to star transformation
	07/08/2024	4.2 Super position Theorem
	07/08/2024	**CLASS TEST-1**
	08/08/2024	4.3 Thevenin's Theorem
	09/08/2024	4.4 Norton's Theorem
7th (12/08/2024-17/08/2024)	12/08/2024	4.5 Maximum power Transfer Theorem .
	14/08/2024	4.6 Solve numerical problems (With Independent Sources Only)

	14/08/2024	4.6 Solve numerical problems (With Independent Sources Only)
	16/08/2024	4.6 Solve numerical problems (With Independent Sources Only)
8th(19/08/2024-24/08/2024)	21/08/2024	4.6 Solve numerical problems (With Independent Sources Only)
	21/08/2024	4.6 Solve numerical problems (With Independent Sources Only)
	22/08/2024	**5. AC CIRCUIT AND RESONANCE:** 5.1 A.C. through R-L, R-C & R-L-C Circuit
	23/08/2024	**5. AC CIRCUIT AND RESONANCE:** 5.1 A.C. through R-L, R-C & R-L-C Circuit
9th (26/08/2024-31/08/2024)	28/08/2024	5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
	28/08/2024	5.3 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
	29/08/2024	5.4 Solution of problems of A.C. through R-L, R-C & R-L-C parallel & CompositeCircuits.
	30/08/2024	5.5 Solution of problems of A.C. through R-L, R-C & R-L-C parallel & CompositeCircuits.
10th (02/09/2024-07/09/2024)	02/09/2024	5.6 Power factor & power triangle.
	04/09/2024	5.7 Deduce expression for active, reactive, apparent power.
	04/09/2024	5.8 Derive the resonant frequency of series resonance and parallel resonance circuit
	05/09/2024	5.7 Define Bandwidth, Selectivity & Q-factor in series circuit.

	06/09/2024	**5.8** Solve numerical problems.
11th (09/10/2024-14/09/2024)	09/09/2024	**6. POLYPHASE CIRCUIT** 6.1 Concept of poly-phase system and phase sequence
	11/09/2024	6.2 Relation between phase and line quantities in star & delta connection
	11/09/2024	6.3 Power equation in 3-phase balanced circuit.
	12/09/2024	**INTERNAL ASSESEMENT**
	13/09/2024	**INTERNAL ASSESEMENT**
12th (16/09/2024-21/09/2024)	18/09/2024	6.4 Solve numerical problems
	18/09/2024	6.5 Measurement of 3-phase power by two wattmeter method.
	19/09/2024	6.5 Measurement of 3-phase power by two wattmeter method.
	20/09/2024	6.6Solve numerical problems.
13th (23/09/2024-28/09/2024)	23/09/2024	6.6Solve numerical problems.
	25/09/2024	**7.TRANSIENTS:** **7.1** Steady state & transient state response.
	25/09/2024	7.2 Response to R-L, R-C & RLC circuit under DC condition.
	26/09/2024	7.2 Response to R-L, R-C & RLC circuit under DC condition.
	27/09/2024	7.2 Response to R-L, R-C & RLC circuit under DC condition.
14th (30/09/2024-05/10/2024)	30/09/2024	7.3Solve numerical problems
	03/10/2024	7.3Solve numerical problems
	04/10/2024	**8.TWO-PORT NETWORK:** 8.1Open circuit impedance (z) parameters
15th (14/10/2024-19/10/2024)	14/10/2024	8.2Short circuit admittance (y) parameters
	17/10/2024	**CLASS TEST-2**
	18/10/2024	8.3Transmission (ABCD) parameters

16th (21/10/2024-26/10/2024)	21/10/2024	8.4Hybrid (h) parameters.
	23/10/2024	8.5Inter relationships of different parameters.
	23/10/2024	8.6T and π representation. 8.7Solve numerical problems
	24/10/2024	8.7Solve numerical problems
	25/10/2024	8.7Solve numerical problems
17th (28/10/2024-02/11/2024)	28/10/2024	8.7Solve numerical problems
	30/10/2024	**9. FILTERS:** 9.1 Define filter 9.2Classification of pass Band, stop Band and cut-off frequency. 9.3Classification of filters.
	30/10/2024	9.4 Constant – K low pass filter.
	01/11/2024	9.5 Constant – K high pass filter. 9.6 Constant – K Band pass filter.
18th (04/11/2024-09/11/2024)	04/11/2024	9.6 Constant – K Band elimination filter.
	06/11/2024	9.7 Solve Numerical problems
	06/11/2024	9.7 Solve Numerical problems
	07/11/2024	9.7 Solve Numerical problems
	08/11/2024	**REVISION**