NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT : Th-2 (CIRCUIT & NETWORK THEORY)

Name Of The Faculty :- Er. DHARMAPADA OJHA
Branch :- ELECTRICAL ENGINEERING **Semester :- 3RD**
Session :- 2024-25 **Examination :-** 2024 (W)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Magnetic Circuits	7	9
2	Coupled Circuits	5	8
3	Circuit Elements And Analysis	6	10
4	Network Theorems	8	11
5	Ac Circuit And Resonance	8	10
6	Poly-phase Circuit	6	8
7	Transients	6	6
8	Two-Port Network	8	6
9	Filter	6	4
TOTAL		60	72

Sign of Faculty

Sign of H.O.D.

Discipline: ELECTRICAL & ELECTRONICS ENGINEERING	Semester: 3rd	Name of the Teaching Faculty: Er. DHARMAPADA OJHA
		SESSION-2024-25 EXAMINATION-2024(W)
Week	**Class Day**	**Theory / Practical Topics**
1st	1st	MAGNETIC CIRCUITS 1 . 1 Introduction
	2nd	1 . 2 Magnetizing force, Intensity, MMF, flux and their relations
	3rd	1 . 2 Magnetizing force, Intensity, MMF, flux and their relations
	4th	1 . 3 Permeability, reluctance and permeance
2nd	1st	1 . 4 Analogy between electric and Magnetic Circuits
	2nd	1 . 5 B-H Curve
	3rd	1 . 7 Hysteresis loop
	4th	1 . 6 Series & parallel magnetic circuit.
3rd	1st	1 . 6 Series & parallel magnetic circuit.
	2nd	COUPLED CIRCUITS: 2 . 1 Self Inductance and Mutual Inductance
	3rd	2 . 2 Conductively coupled circuit and mutual impedance
	4th	2 . 3 Dot convention
4th	1st	2 . 3 Dot convention
	2nd	2 . 4 Coefficient of coupling
	3rd	2 . 5 Series and parallel connection of coupled inductors.
	4th	2 . 6 Solve numerical problems
5th	1st	2 . 6 Solve numerical problems
	2nd	CIRCUIT ELEMENTS AND ANALYSIS: 3 . 1 Active, Passive, Unilateral & bilateral, Linear & Non linear elements
	3rd	3 . 2 Mesh Analysis, Mesh Equations by inspection
	4th	3 . 3 Super mesh Analysis
6th	1st	3 . 3 Super mesh Analysis
	2nd	3 . 4 Nodal Analysis, Nodal Equations by inspection
	3rd	3 . 5 Super node Analysis.
	4th	3 . 6 Source Transformation Technique
7th	1st	3 . 7 Solve numerical problems (With Independent Sources Only)
	2nd	3 . 7 Solve numerical problems (With Independent Sources Only)
	3rd	3 . 7 Solve numerical problems (With Independent Sources Only)
	4th	NETWORK THEOREMS: 4.1 Star to delta and delta to star transformation

Week	Class Day	Theory / Practical Topics
8th	1st	4.2 Super position Theorem
	2nd	4.2 Super position Theorem
	3rd	4.3 Thevenin's Theorem
	4th	4.3 Thevenin's Theorem
9th	1st	4.4 Norton's Theorem
	2nd	4.5 Maximum power Transfer Theorem.
	3rd	4.5 Maximum power Transfer Theorem.
	4th	4.6 Solve numerical problems (With Independent Sources Only)
10th	1st	4.6 Solve numerical problems (With Independent Sources Only)
	2nd	4.6 Solve numerical problems (With Independent Sources Only)
	3rd	AC CIRCUIT AND RESONANCE: 5.1 A.C. through R-L, R-C & R-L-C Circuit
	4th	5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by
11th	1st	5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by
	2nd	5.3 Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite
	3rd	5.3 Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite
	4th	5.4 Power factor & power triangle. 5.5 Deduce expression for active, reactive, apparent power
12th	1st	5.6 Derive the resonant frequency of series resonance and parallel resonance
	2nd	5.7 Define Bandwidth, Selectivity & Q-factor in series circuit
	3rd	5.8 Solve numerical problems
	4th	5.8 Solve numerical problems
13th	1st	POLYPHASE CIRCUIT 6.1 Concept of poly-phase system and phase sequence
	2nd	6.2 Relation between phase and line quantities in star & delta connection
	3rd	6.3 Power equation in 3-phase balanced circuit.
	4th	6.4 Solve numerical problems
14th	1st	6.4 Solve numerical problems
	2nd	6.5 Measurement of 3-phase power by two wattmeter method.
	3rd	6.6 Solve numerical problems.
	4th	6.6 Solve numerical problems.

Week	Class Day	Theory / Practical Topics
15th	1st	TRANSIENTS: 7.1 Steady state & transient state response.
	2nd	TRANSIENTS: 7.1 Steady state & transient state response.
	3rd	7.2 Response to R-L, R-C & RLC circuit under DC condition.
	4th	7.2 Response to R-L, R-C & RLC circuit under DC condition.
16th	1st	7.3 Solve numerical problems
	2nd	7.3 Solve numerical problems
	3rd	TWO-PORT NETWORK: 8.1 Open circuit impedance (z) parameters
	4th	8.2 Short circuit admittance (y) parameters 8.3 Transmission (ABCD) parameters
17th	1st	8.4 Hybrid (h) parameters. 8.5 Inter relationships of different parameters.
	2nd	8.5 Inter relationships of different parameters.
	3rd	8.6 T and π representation.
	4th	8.7 Solve numerical problems
18th	1st	FILTERS: 9.1 Define filter 9.2 Classification of pass Band, stop Band and cut-off frequency.
	2nd	9.4 Constant – K low pass filter. 9.5 Constant – K high pass filter.
	3rd	9.6 Constant – K Band pass filter. 9.7 Constant – K Band elimination filter.
	4th	9.8 Solve Numerical problems

Sign. Of Faculty

Sign. Of HOD