



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)

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	7
2	Coupled Circuits	5	7
3	Circuit Elements And Analysis	6	10
4	Network Theorems	8	11
5	Ac Circuit And Resonance	8	10
6	Poly-phase Circuit	6	6
7	Transients	6	6
8	Two-Port Network	8	11
9	Filters	6	7
	Total Period:	60	75

Discipline: ELECTRICAL ENGINEERING	Semester: 3rd	Name of the Teaching Faculty: Er.Soumyajit Rout
Week	Class Day	Theory / Practical Topics
1 st	1 st	MAGNETIC CIRCUITS 1 . 1 Introduction
	2 nd	1 . 2 Magnetizing force, Intensity, MMF, flux and their relations
	3 rd	1 . 3 Permeability, reluctance and permeance
	4 th	1 . 4 Analogy between electric and Magnetic Circuits 1 . 5 B-H Curve
	5 th	1 . 6 Series & parallel magnetic circuit. 1 . 7 Hysteresis loop
2 nd	1 st	TUTORIAL CLASS
	2 nd	COUPLED CIRCUITS: 2 . 1 Self Inductance and Mutual Inductance
	3 rd	2 . 2 Conductively coupled circuit and mutual impedance
	4 th	2 . 3 Dot convention
	5 th	2 . 4 Coefficient of coupling
3 rd	1 st	2 . 5 Series and parallel connection of coupled inductors.
	2 nd	2 . 6 Solve numerical problems
	3 rd	TUTORIAL CLASS
	4 th	CIRCUIT ELEMENTS AND ANALYSIS: 3 . 1 Active, Passive, Unilateral & bilateral, Linear & Non linear elements

	5 th	3 . 2 Mesh Analysis, Mesh Equations by inspection
4 th	1 st	3 . 3 Super mesh Analysis
	2 nd	3 . 4 Nodal Analysis, Nodal Equations by inspection
	3 rd	3 . 4 Nodal Analysis, Nodal Equations by inspection
	4 th	3 . 5 Super node Analysis
	5 th	3 . 6 Source Transformation Technique
5 th	1 st	3 . 7 Solve numerical problems (With Independent Sources Only)
	2 nd	3 . 7 Solve numerical problems (With Independent Sources Only)
	3 rd	TUTORIAL CLASS
	4 th	NETWORK THEOREMS: 4.1 Star to delta and delta to star transformation
	5 th	4.2 Super position Theorem
6 th	1 st	4.2 Super position Theorem
	2 nd	4.3 Thevenin's Theorem
	3 rd	4.3 Thevenin's Theorem
	4 th	4.4 Norton's Theorem

	5 th	4.5 Maximum power Transfer Theorem.
7 th	1 st	4.5 Maximum power Transfer Theorem.
	2 nd	4.6 Solve numerical problems (With Independent Sources Only)
	3 rd	4.6 Solve numerical problems (With Independent Sources Only)
	4 th	TUTORIAL CLASS
	5 th	AC CIRCUIT AND RESONANCE: 5.1 A.C. through R-L, R-C & R-L-C Circuit
8 th	1 st	5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
	2 nd	5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
	3 rd	5.3 Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits
	4 th	5.4 Power factor & power triangle.
	5 th	5.5 Deduce expression for active, reactive, apparent power.
9 th	1 st	5.6 Derive the resonant frequency of series resonance and parallel resonance circuit
	2 nd	5.7 Define Bandwidth, Selectivity & Q-factor in series circuit.
	3 rd	5.8 Solve numerical problems
	4 th	TUTORIAL CLASS

	5 th	POLYPHASE CIRCUIT 6.1 Concept of poly-phase system and phase sequence
10 th	1 st	6.2 Relation between phase and line quantities in star & delta connectio
	2 nd	6.3 Power equation in 3-phase balanced circuit.
	3 rd	6.4 Solve numerical problems
	4 th	6.5 Measurement of 3-phase power by two wattmeter method.
	5 th	6.6 Solve numerical problems.
11 th	1 st	TUTORIAL CLASS
	2 nd	TRANSIENTS: 7.1 Steady state & transient state response.
	3 rd	7.2 Response to R-L, R-C & RLC circuit under DC condition.
	4 th	7.2 Response to R-L, R-C & RLC circuit under DC condition.
	5 th	7.3 Solve numerical problems
12 th	1 st	7.3 Solve numerical problems
	2 nd	TUTORIAL CLASS
	3 rd	TWO-PORT NETWORK: 8.1 Open circuit impedance (z) parameters
	4 th	8.2 Short circuit admittance (y) parameters

	5 th	8.3 Transmission (ABCD) parameters
13 th		8.4 Hybrid (h) parameters.
		8.5 Inter relationships of different parameters.
		8.5 Inter relationships of different parameters.
		8.6 T and π representation
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14 th		8.7 Solve numerical problems
		8.7 Solve numerical problems
		TUTORIAL CLASS
		FILTERS: 9.1 Define filter 9.2 Classification of pass Band, stop Band and cut-off frequency.
		9.3 Classification of filters. 9.4 Constant – K low pass filter
15 th		9.5 Constant – K high pass filter.
		9.6 Constant – K Band pass filter.
		9.7 Constant – K Band elimination filter.
		9.8 Solve Numerical problems

		TUTORIAL CLASS
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