GOVERNMENT POLYTECHNIC NUAPADA
DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

DISCIPLINE: **ELECTRICAL ENGINEERING**	SEMESTER: **3RD SEM**	NAME OF THE TEACHING FACULTY: **MR. MUKESH KUMAR SAHU**	
SUBJECT: **TH-2: CIRCUIT & NETWORK THEORY**	NO. OF DAYS/WEEK CLASS ALLOTTED: **05**	SEMESTER FROM DATE: **15-09-2022** TO **22-12-2022** NO. OF WEEKS ALLOTTED: **14 WEEKS**	
WEEK	CLASS DAY	DATE	THEORY / PRACTICAL TOPICS
1ST	01	15-09-2022	CIRCUIT ELEMENTS, LAWS, NETWORK ANALYSIS 3.1 Introduction to Electrical circuits Charge, Voltage, current, power and energy OHM's law, Resistance, Inductance & capacitance as parameters
	02	16-09-2022	Types of circuit elements, Active, Passive, Unilateral & bilateral, Linear & Nonlinear elements
2ND	01	19-09-2022	3.2 KVL and KCL, Voltage division & current division.
	02	20-09-2022	3.3 Mesh Analysis, Mesh Equations by inspection 3.3.1 Super mesh Analysis
	03	21-09-2022	3.4 Nodal Analysis, Nodal Equations by inspection 3.5 Super node Analysis
	04	22-09-2022	3.6 Source Transformation Technique 3.7 Solve numerical problems (with independent source only)
	05	23-09-2022	NETWORK THEOREMS: 4.1 Star – delta transformation
3RD	01	26-09-2022	4.2 Super position Theorem
	02	27-09-2022	4.3 Thevenin's Theorem
	03	28-09-2022	4.4 Norton's Theorem
	04	29-09-2022	4.5 Reciprocity Theorem 4.6 Compensation Theorem
	05	30-09-2022	TUTORIALS
4TH	01	10-10-2022	4.7 Maximum power Transfer theorem
	02	11-10-2022	4.8 Milliman's Theorem
	03	12-10-2022	MAGNETIC CIRCUITS 1.1 Introduction
	04	13-10-2022	1.2 Magnetizing force, Intensity, MMF, flux and their relations
	05	14-10-2022	1.3 Permeability, reluctance and permeance
5TH	01	17-10-2022	1.4 Analogy between electric and Magnetic Circuits
	02	18-10-2022	1.5 B-H Curve
	03	19-10-2022	1.6 Series & parallel magnetic circuit
	04	20-10-2022	1.7 Hysteresis loop
	05	21-10-2022	COUPLED CIRCUITS: 2.1 Self Inductance, mutual inductance

6TH	01	25-10-2022	2.2 Conductively coupled circuit and mutual impedance
	02	26-10-2022	2.3 Dot convention
	03	27-10-2022	2.4 Coefficient of coupling
	04	28-10-2022	2.5 Series and parallel connection of coupled inductors
7TH	01	31-10-2022	AC CIRCUIT AND RESONANCE:
			5.1 Review of A.C. through R-L, R-C & R-L-C Circuit
	02	01-11-2022	5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
	03	02-11-2022	5.3 Solution of problems of A.C. through R-L, R-C & R-L-C parallel &Composite Circuits
	04	03-11-2022	5.4 Power factor & power triangle.
	05	04-11-2022	5.5 Deduce expression for active, reactive, apparent power.
8TH	01	07-11-2022	5.6 Series resonance & band width in RLC Circuit
	02	09-11-2022	5.7 Resonant frequency for a tank circuit
	03	10-11-2022	5.8 Q factor & selectivity in series circuit.
	04	11-11-2022	TWO-PORT NETWORK:
			8.1 Open circuit impedance (z) parameters
9TH	01	14-11-2022	8.2 Short circuit admittance (y) parameters
	02	15-11-2022	8.3 Transmission (ABCD) parameters
	03	16-11-2022	8.5 Hybrid (h) parameters.
	04	17-11-2022	8.6 Inter relationships of different parameters.
	05	18-11-2022	8.6 Inter relationships of different parameters.
			TUTORIALS
10TH	01	21-11-2022	8.7 T representation.
	02	22-11-2022	8.8 π representation.
	03	23-11-2022	POLY PHASE CIRCUIT:
			6.1 concept of poly-phase system and phase sequence
	04	24-11-2022	6.2 relation between phase and line quantities in star & delta Connection
			6.3 power equation in three phase balanced circuit
	05	25-11-2022	TUTORIALS
11TH	01	28-11-2022	6.4 solved numerical problems
	02	29-11-2022	6.5 measurement of 3-phase power by two wattmeter method
	03	30-11-2022	6.6 solved numerical problems
	04	01-12-2022	TRANSIENTS:
			7.1 Steady state response.
			7.1 transient state response.
	05	02-12-2022	TUTORIALS
12TH	01	05-12-2022	7.2 Response to R-L circuit under DC condition.
	02	06-12-2022	7.2 Response to R-C circuit under DC condition.
	03	07-12-2022	7.2 Response to RLC circuit under DC condition.
	04	08-12-2022	7.2 Response to RLC circuit under DC condition.
	05	09-12-2022	TUTORIALS

13TH	01	12-12-2022	FILTERS:
			9.1 Classification of filters.
			9.2 Filter networks.
			9.3 Equations of filter networks.
	02	13-12-2022	9.4 Classification of pass Band, stop Band and cut-off frequency.
			9.5 Characteristic impedance in the pass and stop bands
	03	14-12-2022	9.6 Constant – K low pass filter
	04	15-12-2022	9.7 Constant – K high pass filter
	05	16-12-2022	TUTORIALS
14TH	01	19-12-2022	9.8 Constant – K Band pass filter
	02	20-12-2022	9.9 Constant – K Band elimination filler
	03	21-12-2022	REVISION CLASSES Q&A DISCUSSION
	04	22-12-2022	TUTORIALS

Sign. Of Faculty

Sign. Of H.O.D.

Sign. Of Academic Coordinator

Principal
Govt. Polytechnic
Nuapada