DISCIPLINE: ELECTRICAL	SEMESTER: 3rd	NAME OF THE TEACHING FACULTY: Pritee Prava Minz, Sr. Lecturer (EE)
SUBJECT: ELECTRICAL CIRCUITS (TH 2)	NO. OF DAYS/ WEEK CLASS ALLOTTED – 45 Hrs	SEMESTER FROM DATE 14.0-7.2025 to 15.11.2025
WEEK	CLASS DAY	THEORY TOPICS
1	1	**Single Phase A.C Series Circuits Allotted Time (Hours):** Generation of alternating voltage
	2	Phasor representation of sinusoidal quantities
	3	R, L, C circuit elements its voltage and current response
2	4	Impedance, reactance, impedance triangle, Power factor, active power, reactive power, apparent power of R-L A.C series circuit
	5	Impedance, reactance, impedance triangle, Power factor, active power, reactive power, apparent power of R-C A.C series circuit
	6	Impedance, reactance, impedance triangle, Power factor, active power, reactive power, apparent power of R-L-C A.C series circuit
3	7	Power triangle and vector diagram, Resonance, Bandwidth, Quality factor and voltage magnification in series R-L, R-C, R-L-C circuit.
	8	**Single Phase A.C Parallel Circuits:** R-L, R-C and R-L-C parallel combination of A.C. circuits
	9	Impedance, reactance, phasor diagram, impedance triangle, Power factor, active power, apparent power, reactive power, power triangle of R-L parallel circuit.
4	10	Impedance, reactance, phasor diagram, impedance triangle, Power factor, active power, apparent power, reactive power, power triangle of R-C parallel circuit.
	11	Impedance, reactance, phasor diagram, impedance triangle, Power factor, active power, apparent power, reactive power, power triangle of R-L-C parallel circuit.
	12	Resonance in parallel R-L circuit
5	13	Resonance in parallel R-C circuit
	14	Resonance in parallel R-L-C circuit
	15	Bandwidth, Quality factor and voltage magnification
6	16	**Three Phase Circuits:** Phasor and complex representation of three phase supply
	17	Phase sequence and polarity, Types of three-phase connections
	18	Phase and line quantities in three phase star

		system
7	19	Phase and line quantities in three phase delta system
	20	Balanced and unbalanced load
	21	Neutral shift in unbalanced load
8	22	Three phase power, active, reactive and apparent power in star system
	23	Three phase power, active, reactive and apparent power in delta system
	24	**Network Reduction and Principles of Circuit Analysis**: Source transformation
9	25	Star/delta transformation
	26	delta/star transformation
	27	Mesh Analysis
10	28	Node Analysis
	29	**Network Theorems**: Superposition theorem
	30	Numerical on Superposition theorem
11	31	Thevenin's theorem
	32	Numerical on Thevenin's theorem
	33	Norton's theorem
12	34	Numerical on Norton's theorem
	35	Maximum power transfer theorem
	36	Numerical on Maximum power transfer theorem
13	37	Reciprocity Theorem
	38	**Two Port Network:** Open Circuit Impedance Parameters
	39	Short Circuit Parameters
14	40	Admittance Parameters
	41	Transmission Parameters Hybrid Parameters
	42	Hybrid Parameters
15	43	Interrelationship of Two Port Network
	44	Inter Connection of Two Port Network
	45	Inter Connection of Two Port Network
16	46	Performance Test II
	47	Revision

Signature of the Subject Teacher