KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY, BHUBANESWAR
(Deemed to be University)
School of Electrical Engineering

BASIC ELECTRICAL ENGINEERING(EE10002)
Spring Semester 2022_23

Lesson Plan:

Class No	Learning Topics to be covered	Date
	Introduction class	
M-1	**DC Circuits:**	
1	Introduction to Basic Fundamentals - circuit, network, active element, passive element, linear element, nonlinear element, bilateral element and unilateral element, voltage and current sources(ideal and practical), mesh, loop, node, junction, Kirchhoff's law.	
2	Source transformation and Equivalent resistance calculation of the circuit (with numerical problems).	
3	Equivalent resistance calculation through star-delta transformation(with numerical problems)(Derivation of star-delta transformation is not required)	
4	Mesh analysis excluding supermesh (with numerical problems).	
5	Nodal analysis excluding supernode (with numerical problems).	
6	Superposition theorem with independent source only (with numerical problems).	
M-2	**AC Circuits:**	
7	Basic Terminology: Amplitude, Time period, Frequency, phase, Phase difference, average value, RMS Value, Form Factor, Peak Factor	
8	Problems on Basic Terminology of AC Circuits.	
	Doubt clearing class	
	Mid Semester Examination 03.04.2023-08.04.2023	
	Post Mid Semester Session 10.04.2023-03.06.2023	
9	Phasor representation of alternating quantities.	
10	AC through R,L,C Circuit(with numerical problems).	
11-12	AC Series RL, RC, RLC circuit (with numerical problems).	
13-14	Comparison between 1-phase and 3-phase supply system, Three phase AC circuits: voltage,current and power relationship in star and delta connections along with phasor diagram(with numerical problems)	
M-3	**Electromagnetic Circuits:**	

15	Basic Terminology: Magnetic field, Magnetizing Force, Magnetic Flux density, Magnetic permeability, MMF, Reluctance, Permeance, Analogy between Electric Circuits and Magnetic Circuits.	
16	Analysis of series magnetic Circuit	
17	Problems on magnetic circuits	
18	B-H curve	
M-4	**Scope and safety measures**	
19	Electrical Energy Scenario in India.	
20	Single Phase Transformer: Principle and Application.	
21	Principle and application of 3-ph and 1-ph Induction Motor.	
22	Power ratings of air conditioners, PCs, laptops, printers, refrigerator, washing machine, different lamps, electricity tariff, calculation of electricity bill for domestic consumers.	
23	**Personal safety measures:** Electric Shock, Earthing and its types, Safety Precautions to avoid shock.	
24	Working principle of Fuse and Miniature circuit breaker (MCB), Residual Current Circuit Breaker (RCCB)	
	End Semester Examination **12.06.2023-19.06.2023**	