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

BASIC ELECTRICAL ENGINEERING(EE10002)
Autumn Semester 2023_24

Lesson Plan:

Class No	Learning Topics to be covered	Date
	Introduction class	**31.07.2023**
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.	**04.08.2023**
2	Equivalent resistance calculation of the circuit(series and parallel), current division rule, voltage division rule, kirchhoff's law(with basic numerical problem)	**07.08.2023**
3	Source transformation(with basic numerical problems).	**11.08.2023**
4	Equivalent resistance calculation through star-delta transformation(with numerical problems)(Derivation of star-delta transformation is not required)	**14.08.2023**
5	Mesh analysis with independent voltage source excluding supermesh (with numerical problems)(Maximum upto 2 no of mesh)	**18.08.2023**
6	Nodal analysis with independent voltage source and current source excluding supernode (with numerical problems)(Maximum upto 2 no of junction excluding reference junction)	**21.08.2023**
7	Superposition theorem with independent voltage and current source only(with numerical problems) (Circuit containing maximum 2 sources)	**25.08.2023**
8	Thevenin's Theorem with numerical problem	**28.08.2023**
9	Norton's Theorem with numerical problem	**01.09.2023**
10	Maximum power transfer theorem with numerical problem	**04.09.2023**
	Doubt clearing class	**08.09.2023**
M-2	**AC Circuits:**	
11-12	Basic Terminology: Amplitude, Time period, Frequency, phase, Phase difference, average value for full cycle and half cycle(derivation), RMS Value for full cycle(derivation), Form Factor, Peak Factor	**11.09.2023** **15.09.2023**
13	Problems on Basic Terminology of AC Circuits.	**18.09.2023**
14	Phasor representation of alternating quantities(Rectangular and Polar form)	**22.09.2023**

15-17	AC through R,L,C Circuit(with numerical problems).	**25.09.2023** **29.09.2023** **06.09.2023**
18	AC Series RL circuit (with numerical problems)	**09.10.2023**
	Doubt clearing class	**13.10.2023**
	Mid Semester Examination **16.10.2023-21.10.2023**	
	Post Mid Semester Session **30.10.2023-02.12.2023**	
19-20	AC Series RC, RLC circuit (with numerical problems)	**30.10.2023** **03.11.2023**
21-22	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)	**06.11.2023** **10.11.2023**
M-3	**Electromagnetic Circuits:**	
23	Basic Terminology: Magnetic field, Magnetizing Force, Magnetic Flux density, Magnetic permeability, MMF, Reluctance, Permeance, Analogy between Electric Circuits and Magnetic Circuits.	**13.11.2023**
24	Analysis of series magnetic Circuit, Problems on magnetic circuits (Neglecting leakage and Fringing effect) (Circuits on without airgap and circuit containing with maximum 1 airgap)	**17.11.2023**
25	B-H curve and Hysteresis loop	**20.11.2023**
M-4	**Scope and safety measures**	
26	Electrical Energy Scenario in India, Single Phase Transformer: Principle and Application.	**24.11.2023**
27	Principle and application of 3-ph and 1-ph Induction Motor.	**27.11.2023**
28	Power ratings of air conditioners, PCs, laptops, printers, refrigerator, washing machine, different lamps, electricity tariff, calculation of electricity bill for domestic consumers(with numerical problems). **Personal safety measures:** Electric Shock, Earthing and its types, Safety Precautions to avoid shock, Working principle of Fuse and Miniature circuit breaker (MCB), Residual Current Circuit Breaker (RCCB)	**01.12.2023**
	End Semester Examination **11.12.2023-16.12.2023**	