BHUBANANANDA ORISSA SCHOOL OF ENGINEERING

LESSON PLAN

BY: PRADEEP KUMAR DHAL SAMANT (Lecturer)

SUBJECT: CIRCUIT THEORY

SEMESTER: 3RD

BRANCH: E&TC

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Discipline :E&TC	Semester: 3rd	Name of the Teaching Faculty: PRADEEP KUMAR DHAL SAMANT
Subject: CIRCUIT THEORY (TH2)	No of Days/per week class allotted:4	Semester from 01.07 2024 to 08.11.2024 No of weeks:18
Week No.	Class Day (Mon, Tues, Thurs & Friday)	Theory Topics
1st	01-07-2024	**Chapter-1- CIRCUIT ELEMENTS& ENERGY SOURCES** **1.1** Circuit elements (Resistance, Inductance, Capacitance), Scope of network analysis & synthesize.
	02-07-2024	**1.2** Voltage Division & Current Division, Energy Sources (Kirchoff's Current Law and Kirchoff's Voltage Law) related Problems.
	04-07-2024	Solve numerical problems of above.
	05-07-2024	**1.3** Electric charge, Electric current, Electrical energy, Electrical potential, R-L-C parameters, Active& Passive Elements.
2nd	08-07-2024	**1.4** Energy Sources, Current and voltage sources and their transformation & mutual inductance.
	09-07-2024	Solve numerical problems of above.
	11-07-2024	**1.5** Star – Delta transformation.
	12-07-2024	Solve numerical problems of above.
3rd	15-07-2024	**Chapter-2 NETWORK THEOREMS (Applications in dc circuits)** **2.1** Nodal & Mesh Analysis of Electrical Circuits with simple problems.
	16-07-2024	Solve numerical problems of above.
	18-07-2024	Solve numerical problems of above.
	19-07-2024	**2.2** Superposition Theorem – Statement, explanation & applications.
4th	22-07-2024	Solve numerical problems of above.
	23-07-2024	Thevenin's Theorem – Statement, explanation & applications.

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	25-07-2024	Solve numerical problems of above.
	26-07-2024	Norton's Theorem – Statement, explanation & applications.
5th	29-07-2024	Solve numerical problems of above.
	30-07-2024	Maximum Power transfer Theorem – Statement, explanation & applications.
	01-08-2024	Solve numerical problems of above.
	02-08-2024	Milliman's Theorem – Statement, explanation & applications.
6th	05-08-2024	Solve numerical problems of above.
	06-08-2024	Reciprocity Theorem - Statement, explanation & applications.
	08-08-2024	Solve numerical problems of above.
	09-08-2024	**CLASS TEST I**
7th	12-08-2024	**Chapter-3 Power Relation in AC circuits & Transient Response of passive circuits** **3.1** Definition of frequency, Cycle, Time period, Amplitude, Average value, RMS value, Instantaneous power.
	13-08-2024	Peak factor & Form factor, Apparent power, Active power, Reactive power, power Triangle of AC Wave.
	16-08-2024	**3.2** Phasor representation of alternating quantities
8th	20-08-2024	**3.3** Single phase AC circuits-Behaviours of A.C. through pure Resistor, Inductor & Capacitor.
	22-08-2024	**3.4** DC Transients- Behaviours of R-L series circuit & draw the phasor diagram and voltage triangle.
	23-08-2024	**3.4** DC Transients- Behaviours of R-C series circuit & draw the phasor diagram and voltage triangle.
9th	27-08-2024	**3.4** DC Transients-Behaviours of R-L-C series circuit & draw the phasor diagram and voltage triangle.
	29-08-2024	**3.5** Define Time Constant of the above Circuit.

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	30-08-2024	**3.6** Solve numerical simple problems of above Circuit.
10th	02-09-2024	Solve numerical simple problems of above Circuit.
	03-09-2024	**Chapter-4 RESONANCE AND COUPLED CIRCUITS** **4.1** Introduction to resonance circuits & Resonance tuned circuit. **4.2** Series and Parallel resonance.
	05-09-2024	**4.3** Expression for series resonance, Condition for Resonance, Frequency of Resonance, Impedance, Current, Voltage, Power, Q Factor and Power Factor of Resonance, Bandwidth in terms of Q.
	06-09-2024	**4.4** Parallel Resonance (RL, RC & RLC) and derive the expression.
11th	09-09-2024	**4.5** Comparisons of Series & Parallel resonance & applications.
	10-09-2024	**4.6** Simple problems of above Circuit
	12-09-2024	Simple problems of above Circuit.
	13-09-2024	**1st Internal Assessment**
12th	17-09-2024	**Chapter-5 LAPLACE TRANSFORM AND ITS APPLICATIONS**
	19-09-2024	**5.1** Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-L circuit.
	20-09-2024	Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-C circuit.
13th	23-09-2024	Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-L-C circuit.
	24-09-2024	**5.2** Analysis and derive the equations for circuit parameters of Impulse response of R-L circuit.
	26-09-2024	Analysis and derive the equations for circuit parameters of Impulse response of R-C circuit.
	27-09-2024	Analysis and derive the equations for circuit parameters of Impulse response of R-L-C circuit.
14th	30-09-2024	**CLASS TEST II**
	01-10-2024	**Chapter-6 Two Port Network Analysis.** **6.1** Network elements, ports in Network (One port, two port).

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	03-10-2024	**6.2** Network Configurations (T & pie). **6.5** Define T-Network & pie – Network.
	04-10-2024	**6.3** Open circuit (Z-Parameter) Parameters.
15th	14-10-2024	Short Circuit(Y-Parameter) Parameters.
	15-10-2024	Calculate open & short Circuit Parameters for Simple Circuits & its conversion.
	17-10-2024	Simple problems of the above.
	18-10-2024	**6.4** h- parameter (hybrid parameter) Representation.
16th	21-10-2024	**Chapter-7 FILTERS & ATTENUATORS** **7.1** Ideal & Practical filters and its applications, cut off frequency, passband and stop band.
	22-10-2024	**7.2** Classify filters- low pass and high pass filters & study their Characteristics.
	24-10-2024	Classify filters- band pass, band stop filters & study their Characteristics.
	25-10-2024	**7.3** Butterworth Filter Design
17th	28-10-2024	**7.4** Attenuation and Gain, Bel, Decibel & Neper and their relations.
	29-10-2024	**7.5** Attenuators & its applications. Classification-T- Type & PI – Type attenuators.
	01-11-2024	**2nd Internal Assessment**
18th	04-11-2024	**REVISION & IMPORTANT QUESTION DISCUSSION.**
	05-11-2024	
	07-11-2024	
	08-11-2024	

28/06/2024

Signature of Faculty

HOD (E&TC)
Sr. Lecturer
Electronics & Telecomm. Engg
BOSE, Cuttack

Principal