LESSON PLAN

Discipline: E& T.C Engg.	**Semester:** Third (3rd)	**Name of the Faculty: Anurag Sethy**
Subject: Circuit Theory.	**No. of days/weekclass allotted:** Five (4)	**Semester from Date: 15**.09.22 **to Date:22.12.2022** **No. of Weeks:** 15
WEEK	**CLASS DAY**	**THEORY TOPICS**
1st	1st	Circuit elements (Resistance, Inductance, Capacitance), Scope of network analysis &synthesize
	2nd	Voltage Division & Current Division, Energy Sources
	3rd	Electric charge, electric current, Electrical energy,Electrical potential
	4th	RLC parameters, Active& Passive Elements.
2nd	1st	Energy Sources, Current and voltage sources and their transformation, & Mutual Inductance
	2nd	**Star Delta Transformation**
	3rd	Nodal Analysis of Electrical Circuits with simpleproblem
	4th	Mesh Analysis of Electrical Circuits with simpleproblem
3rd	1st	Thevenin's Theorem
	2nd	Norton's Theorem
	3rd	Maximum Power transfer Theorem
	4th	Superposition Theorem ,
4th	1st	Millman Theorem
	2nd	Reciprocity Theorem-Statement and Explanation
	3rd	Solve numerical problems of above

	4th	Solve numerical problems of above
5th	1st	Solve numerical problems of above
	2nd	Solve numerical problems of above
	3rd	Definition of frequency, Cycle, Time period, Amplitude, Average value, RMS value, Instantaneous power & Form factor
	4th	Reactive power, power Triangle of AC Wave
6th	1st	Phasor representation of alternating quantities
	2nd	Single phase Ac circuits-Behaviors of A.C. through pureResistor, Inductor & Capacitor
	3rd	DC Transients-Behaviors of RL series circuit & drawthe phasor diagram and voltage triangle
	4th	DC Transients-Behaviors of R-C series circuit & drawthe phasor diagram and voltage triangle
7th	1st	DC Transients-Behaviors of R-L-C series circuit &draw the phasor diagram and voltage triangle.
	2nd	Define Time Constant of the above Circuit
	3rd	Solve numerical simple problems of above Circuit
	4th	Solve numerical simple problems of above Circuit
8th	1st	**Review Class**
	2nd	Introduction to resonance circuits & Resonance tunedcircuit,
	3rd	Series& Parallel resonance
	4th	Expression for series resonance, Condition for Resonance, Frequency of Resonance,
	1st	Impedance, Current, Voltage, power, Q Factor andPower Factor of Resonance, Bandwidth in term of Q.Parallel Resonance (RL&RC)& derive the expression
	2nd	Parallel Resonance RLC& derive the expression

9th	3rd	Comparisons of Series & Parallel resonance& applications
	4th	simple problems of above Circuit
10th	1st	simple problems of above Circuit
	2nd	Introductions of Laplace Transformation
	3rd	Analysis and derive the equations for circuit parametersof Step response of R-L ckt
	4th	Analysis and derive the equations for circuit parametersof Step response of R-L ckt
11th	1st	Analysis and derive the equations for circuit parametersof Step response of R-C ckt
	2nd	Analysis and derive the equations for circuit parametersof Step response of R-L-C ckt
	3rd	Analysis and derive the equations for circuit parametersof Impulse response of R-L ckt
	4th	Analysis and derive the equations for circuit parametersof Impulse response of R-C ckt
12th	1st	Analysis and derive the equations for circuit parametersof Impulse response of R-L-C ckt
	2nd	Network elements, ports in Network (One port, twoport),
	3rd	Network Configurations (T & pie)
	4th	Open circuit (Z-Parameter)& Short Circuit(Y- Parameter) Parameters- Calculate open &short CircuitParameters for Simple Circuits & its conversion
	1st	h- parameter (hybrid parameter) Representation
	2nd	Define T-Network & pie – Network

13th	3rd	Numerical problem
	4th	Ideal &Practical filters and its applications, cut offfrequency, passband and stop band.
14th	1st	Classify filters- low pass, high pass filters& study their Characteristics.
	2nd	band pass, band stop filters & study their Characteristics.
	3rd	Butterworth Filter Design
	4th	Attenuation and Gain, Bel , Decibel & neper and theirrelations
15th	1st	Attenuators& its applications. Classification-T- Typeattenuators
	2nd	Classification PI – Type attenuators
	3rd	**Review Class**
	4th	Revision class

- **In addition to these classes Extra classes for Doubt Clearance will be done time to time .**
- **Monthly test will be conducted at the end of each Month as per schedule prepared by Ideal &Practical filters and its applications, cut offfrequency, passband and stop band.ETC Department.**