



# UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

DISCIPLINE: Electrical Engg.	SEMESTER: 3 <sup>rd</sup> Sem	NAME OF THE TEACHING FACULTY: Er. Kalakar Mohanty		
<b>SUBJECT:</b> Circuit and Network Theory	No of Days/Per week class allotted: 5 Class P/W(75)	Semester From Date: 15/09/2022 To Date: 22/12/2022 No. Of Weeks: 15		
WEEK	CLASS DAY	THEORY TOPICS	REMARKS	
1 <sup>st</sup>	1 <sup>st</sup>	<b>Magnetic circuits : Introduction</b>	Date	Dean/Principal
	2 <sup>nd</sup>	Magnetizing force, Intensity, MMF, flux and their relations		
	3 <sup>rd</sup>	Permeability, reluctance and permeance		
	4 <sup>th</sup>	Analogy between electric and Magnetic Circuits		
	5 <sup>th</sup>	B-H Curve		
2 <sup>nd</sup>	1 <sup>st</sup>	Series & parallel magnetic circuit		
	2 <sup>nd</sup>	Hysteresis loop		
	3 <sup>rd</sup>	Self Inductance and Mutual Inductance		
	4 <sup>th</sup>	Conductively coupled circuit and mutual impedance		
	5 <sup>th</sup>	Dot convention		
3 <sup>rd</sup>	1 <sup>st</sup>	Assignment		
	2 <sup>nd</sup>	Coefficient of coupling, Series and parallel connection of coupled inductors.		
	3 <sup>rd</sup>	Solve Numerical problem		
	4 <sup>th</sup>	Star to delta & delta to star Transformation		
	5 <sup>th</sup>	Doubt Clear Class		
4 <sup>th</sup>	1 <sup>st</sup>	Assignment		
	2 <sup>nd</sup>	Super position Theorem		
	3 <sup>rd</sup>	<b>Solve Numerical problem</b>		

	4 <sup>th</sup>	Assignment question Discussion		
	5 <sup>th</sup>	Thevenin's Theorem		
5 <sup>th</sup>	1 <sup>st</sup>	Norton's Theorem		
	2 <sup>nd</sup>	Maximum power Transfer Theorem.		
	3 <sup>rd</sup>	<b>Solve Numerical problem</b>		
	4 <sup>th</sup>	A.C. through R-L, R-C & R-L-C Circuit		
	5 <sup>th</sup>	Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.		
6 <sup>th</sup>	1 <sup>st</sup>	Assignment		
	2 <sup>nd</sup>	Assignment question Discussion		
	3 <sup>rd</sup>	<b>Doubt clear class</b>		
	4 <sup>th</sup>	Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits		
	5 <sup>th</sup>	Power factor & power triangle.		
7 <sup>th</sup>	1 <sup>st</sup>	Deduce expression for active, reactive, apparent power		
	2 <sup>nd</sup>	Derive the resonant frequency of series resonance and parallel resonance circuit		
	3 <sup>rd</sup>	Define Bandwidth, Selectivity & Q-factor in series circuit.		
	4 <sup>th</sup>	Solve Numerical problem		
	5 <sup>th</sup>	Concept of poly phase system and phase sequence		
8 <sup>th</sup>	1 <sup>st</sup>	<b>Relation between phase and line quantities in star &amp; delta connection</b>		
	2 <sup>nd</sup>	Power equation in 3-phase balanced circuit.		
	3 <sup>rd</sup>	Assignment		
	4 <sup>th</sup>	<b>Class test</b>		
	5 <sup>th</sup>	Solve Numerical problem		
9 <sup>th</sup>	1 <sup>st</sup>	Measurement of 3-phase power by two wattmeter method.		
	2 <sup>nd</sup>	Solve Numerical problem		
	3 <sup>rd</sup>	Steady state & transient state response		
	4 <sup>th</sup>	Assignment question Discussion		
	5 <sup>th</sup>	Response to R-L, R-C & RLC circuit under DC condition		
	1 <sup>st</sup>	<b>Doubt Clear Class</b>		

10 <sup>th</sup>	2 <sup>nd</sup>	Solve Numerical problem		
	3 <sup>rd</sup>	Solve Numerical problem		
	4 <sup>th</sup>	Solve Numerical problem		
	5 <sup>th</sup>	Open circuit impedance (z) parameters		
11 <sup>th</sup>	1 <sup>st</sup>	Short circuit admittance (y) parameters		
	2 <sup>nd</sup>	Assignment		
	3 <sup>rd</sup>	Transmission (ABCD) parameters		
	4 <sup>th</sup>	Hybrid (h) parameters		
	5 <sup>th</sup>	Hybrid (h) parameters		
12 <sup>th</sup>	1 <sup>st</sup>	Inter relationships of different parameters		
	2 <sup>nd</sup>	T and $\pi$ representation		
	3 <sup>rd</sup>	Solve Numerical problem		
	4 <sup>th</sup>	Define filter		
	5 <sup>th</sup>	Classification of pass Band, stop Band and cut-off frequency		
13 <sup>th</sup>	1 <sup>st</sup>	<b>Doubt Clear Class</b> <b>Class test</b>		
	2 <sup>nd</sup>	Classification of filters.		
	3 <sup>rd</sup>	Revision		
	4 <sup>th</sup>	Constant – K low pass filter		
	5 <sup>th</sup>	<b>Sample Paper Question Discussion</b>		
14 <sup>th</sup>	1 <sup>st</sup>	Constant – K high pass filter.		
	2 <sup>nd</sup>	Assignment		
	3 <sup>rd</sup>	Solve Numerical problem		
	4 <sup>th</sup>	Solve Numerical problem		
	5 <sup>th</sup>	Solve Numerical problem		
15 <sup>th</sup>	1 <sup>st</sup>	Constant – K Band pass filter		
	2 <sup>nd</sup>	<b>Class test</b>		
	3 <sup>rd</sup>	Constant – K Band elimination filter		
	4 <sup>th</sup>	Solve Numerical problem		
	5 <sup>th</sup>	Solve Numerical problem		

Chittaranjan Parida

HOD

Chittaranjan Parida

DEAN

Chittaranjan Parida

PRINCIPAL