



JMIETI, Radaur

Lesson Planning of **Basic Electrical Engineering**, Deptt. **Applied Science** Semester w.e.f **Jan, 2019**

Name of Teacher : Richa Gaur

Designation : Assistant Professor

Subject with code : ES-101

Objective of Course :

1. To study the various theorems & analysis techniques to analyse the DC steady state circuits.
2. To understand the AC fundamentals & to analyse the AC circuits.
3. To perform various test on single phase transformer and to study the polyphase system to measure power.
4. To understand the basic concepts of AC & DC electrical machines and to study the electrical equipment installations.

Week & Month	Topic / Chapter Covered	Academic Activity	Test/Assignment
Jan	Ohm's Law , Junction ,node	Lecture	
Jan	Circuit elements classification linear & Nonlinear	Lecture	
Jan	Active & Passive , lumped & distributes	Lecture	Assignment
Jan	KVL, KCL,	Lecture	
Jan	Loop and Node –voltage analysis of resistive circuit	Lecture	Test
Jan	Star delta transformation for resistors .Network Theorems Superposition,	Lecture	
Jan	Thevenin's Norton's and Maximum power transfer theorems in a resistive network	Lecture	Test
Jan	Mathematical Representation of various wave function.	Lecture	Assignment
Jan	Polar & rectangular form of representation of impedances and phasor quantities	Lecture	
Jan	Addition & subtraction of two or more phasor sinusoidal quantities using component resolution methods	Lecture	

Feb	RMS and average values of various waveforms.	Lecture	Assignment
Feb	Behavior of various components fed by A.C	Lecture	
Feb	Steady state response of pure R, Pure L, Pure C,	Lecture	
Feb	RL, RC,RLC Series with Waveforms of instantaneous voltage	Lecture	Test
Feb	Current & power of simultaneous time axis scale and corresponding phasor diagrams	Lecture	
Feb	Power factor , Active , reactive & apparent power	Lecture	
Feb	Frequency Response of Series & parallel RLC ckts.	Lecture	Assignment
Feb	Including resonance, Q factor , cut off frequency & bandwidth	Lecture	
Feb	Generation of alternating emf	Lecture	
Feb	Generation alternating 3 – phase emf 3-phase balanced circuits,	Lecture	
March	voltage and current relation in star and delta connections	Lecture	Test
March	Measurement of 3-phase power by two wattmeter method for various types of star & delta connected balanced loads	Lecture	Test
March	Concept of magnetic Circuits, relation between MMF & Reluctance	Lecture	
March	Hysteresis & Eddy current phenomenon,	Lecture	
March	Principle , construction & emf equation phasor diagram at ideal	Lecture	
March	No load and on load conditions . Losses & efficiency	Lecture	Test
March	Regulation , OC & SC test , Equivalent circuit , concept of auto transformer	Lecture	Test
March	Construction and working of DC Machine with Commutator action	Lecture	Assignment
March	Speed control of dc shunt motor	Lecture	
March	Generation of rotating magnetic field	Lecture	
April	Constructions and working of a three phase induction motor	Lecture	Assignment
April	Significance of torque –slip characteristic.	Lecture	
April	Basics of single –phase induction motor	Lecture	Test
April	Capacitor start capacitor run single – phase induction motor working	Lecture	Test
April	Basic construction and working of synchronous generator and motor	Lecture	
April	Switch Fuse Unit (SFU)	Lecture	

April	MCB,ELCB	Lecture	Assignment
April	MCCB, Types of wires and cables	Lecture	Assignmnet
April	Earthing	Lecture	

Outcome of Course:

1. Capable to analyse the steady state AC & DC circuits.
2. Capable to deal with introductory balance 3-phase system analysis& single-phase transformer.
3. Familiar with basics of Electrical motors & generators and Electrical installations.

(Sign. of HOD)

(Sign. of Teacher Concerned with date)