

LESSON PLANSubject: Basic of Electrical & Electronics Engineering Semester: ThirdBranch: Mechanical

Unit Number	Name of the Topic	No of Class Required	Remarks
Unit 1.0 DC & AC Circuits	1.1 DC Circuits Concept of charge, potential difference and current, Kirchoff's Current and Voltage Law (KCL & KVL), Series and Parallel circuits	2	
	1.2 AC Fundamentals Phase Difference, Power Factor Unity, Lag and lead, RMS Value, Average Value and Form Factor	1	
	1.3 AC Circuits RLC Circuits, Impedance, admittance, Power and Phasor Representation	1	
	1.4 Polyphase circuits Basic Concepts of Three Phase Generation, phase sequence Line, Phase values of voltages and currents and their Relationship in three phase ,AC circuits. Star and Delta configuration	2	
	1.5 Quiz conduction, Doubt Class	1	
	1.6 Unit Test	1	
Unit 2.0 Transformer & electrical Machines	2.1 Transformer –Construction, working principle, Transformation ratio, EMF equation.	2	
	2.2 DC Machines –Construction, DC Generator- Types, Working principle. EMF Equation. DC Motors- Types, Working principle, EMF Equation, Back emf, Torque	3	
	2.3 Three Phase and single phase Induction Motor Construction, working principle. Slip, Torque-Speed characteristics, Single phase induction motor Operating principle and classification.	3	
	2.4 Three Phase Synchronous machine -Construction, Rotor construction-Salient and non-salient, working principle of Synchronous generator and motor and applications	2	
	2.4 Quiz conduction, Doubt Class	1	
	2.5 Unit Test	1	
Unit-3.0 Diode and its Applications	3.1 Introduction of PN junction diode, equivalent circuits of PN junction diode	1	
	3.2 V-I characteristics of diode, forward and reverse biased	1	
	3.3 Diode current equation, Need of rectification, Types of rectifiers(half wave and full wave)	2	
	3.4 Zener Diode, equivalent circuits of Zener diode, Zener diode as a voltage regulator	2	
	3.5 Quiz conduction, Doubt Class	1	
	3.6 Unit Test	1	
Unit-4.0 BJT, FET and MOSFET	4.1 Introduction of BJT, types of BJT, construction and operation of NPN and PNP transistor	1	
	4.2 Need of transistor biasing Input and output characteristics of all configurations(CE, CB and CC) of transistor, Transistor's applications:- Transistor as an amplifier ,transistor as a switch	2	

	4.4 Introduction of FET, classification of FET types of JFET, construction and operation of N-channel and P-channel JFET	1	
	4.5 MOSFET, Construction and operation of depletion type MOSFET, Construction and operation of enhancement type MOSFFET	1	
	4.6 Quiz conduction, Doubt Class	1	
	4.7 Unit Test	1	
<b>Unit-5.0 Test and Measuring Instruments</b>	5.1 Multimeter (Analog and Digital multimeter), working of multimeter	1	
	5.2 Function Generator (frequency generator), working .	1	
	5.3 CRO: Block diagram of CRO, constructional features of CRT, principle of operation, working of various blocks of CRO, Features of dual trace oscilloscopes.	2	
	5.4 Block schematic description of digital storage oscilloscope, Fundamentals of LED and LCD display techniques	1	
	5.5 Quiz conduction, Doubt Class	1	
	5.6 Unit Test	1	
<b>Total Class Required</b>		<b>42</b>	

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