

LESSON PLAN (WINTER-2024)

Discipline: AA, CIVIL, ELECTRICAL	Semester: 1st	Name of the Teaching Faculty: P.BHAWANI
Subject: Fundamentals of Electrical & Electronics Engineering	No of Days /per week class allotted:2	Semester From date: 16/08/2024 to 10/12/2024 No of Weeks:15
Week	Class Day	Theory Topics
1st	1st	UNIT I Overview of Electronic Components & Signals: Passive Active Components: Resistances, Capacitors, Inductors and their Applications (Concept)
	2nd	simple problems of Resistance, Capacitor & Inductor
2nd	1st	Diodes and their Applications (Concept)
	2nd	Transistors and their Applications (Concept)
3rd	1st	FET and their Applications (Concept)
	2nd	MOS, CMOS and their Applications (Concept)
4th	1st	Definition, classification and Working of diode(PN junction)
	2nd	Definition, classification and Working of diode(LED, Zener)
5th	1st	Definition, classification and Working of transistor
	2nd	Definition, classification and Working of transistor
6th	1st	Definition, classification and Working of FET
	2nd	Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values
7th	1st	different types of signal waveforms, Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources. (Definitions)
	2nd	UNIT II Overview of Analog Circuits: Operational Amplifiers-Ideal Op-Amp
8th	1st	Practical op amp, Open loop and closed loop configurations
	2nd	Application of Op-Amp as amplifier, adder
9th	1st	Application of Op-Amp as differentiator
	2nd	Application of Op-Amp as integrator.
10th	1st	UNIT III Overview of Digital Electronics: Introduction to Boolean Algebra
	2nd	Electronic Implementation of Boolean Operations
11th	1st	Gates-Functional Block Approach (Simple problems of Number system)
	2nd	Simple problems of Number system
12th	1st	Simple problems of Number system
	2nd	Storage elements-Flip Flops-A Functional block approach
13th	1st	Counters: Ripple
	2nd	Ripple Counter
14th	1st	Up/down counter
	2nd	decade counter
15th	1st	decade counter
	2nd	Introduction to digital IC Gates (of TTL Type)

Signature of the Faculty

LESSON PLAN (Winter-2024)

Discipline: ETC	Semester: 3rd	Name of the Teaching Faculty: P.BHAWANI
Subject: Electronics Measurement & Instrumentation	No of Days / per week class allotted: 4	Semester From date: 29.06.2024 To 08.11.2024 No of Weeks:15
Week	Class Day	Theory Topics
1st	1st	Unit-1: Qualities of Measurement(05) 1.1 Discuss the Static Characteristics,
	2nd	1.2 Accuracy, sensitivity, reproducibility
	3rd	static error of instruments
	4th	1.3 Dynamic characteristics & speed of instruments.
2nd	1st	1-4 Errors of an instrument & explain various types.
	2nd	Unit-2: Indicating Instruments (10) 2.1 Introduction to Indicator & Display devices & its types
	3rd	2.2 Basic principle of meter movement, permanent magnetic moving coil movement & its advantages & disadvantages.
	4th	2.3 Operation of Moving Iron Instrument
3rd	1st	2.4 Basic principle of operation of DC Ammeter and Multi range Ammeter
	2nd	2.5 Basic principle of operation of AC Ammeter and Multi range Ammeter
	3rd	2-6 Basic principle of operation of DC Voltmeter and its applications
	4th	2.7 Basic principle of operation of AC Voltmeter and its application
4th	1st	2.8 Basic principle of Ohm Meter (Series & Shunt type)
	2nd	2.9 Basic principle of Analog Multimeter, its types & applications
	3rd	2-10 Operation of Q meter and its essentials
	4th	Unit-3: Digital Instruments(10) 3.1 Principle of operation of Ramp type Digital Voltmeter & applications
5th	1st	3.2 Operation of display of 3 1/2, 4 1/2– Digital Multimeter & Resolution and Sensitivity
	2nd	3.3 Basic principle of operation of working of Digital Multimeter its types & applications
	3rd	3.4 Basic principle of operation of working of Digital Frequency Meter
	4th	3.5 Operation of working of Digital Measurement of Time
6th	1st	3.6 Measurement of Frequency.
	2nd	3.7 Principle of operation of working of Digital Tachometer
	3rd	3.8 Principle of operation of working of Automation in Digital Instruments
	4th	(Polarity Indication, Ranging, Zeroing & Fully Automatic)
7th	1st	3.9 Block diagram of LCR meter & its working principle.
	2nd	Unit-4: Oscilloscope(08) 4.1 Basic principle of Oscilloscope & its Block Diagram
	3rd	4.2 Basic principle & Block diagram of CRO,
	4th	Dual Trace Oscilloscope & its specification

8th	1st	4.3 CRO Measurements
	2nd	Lissajous figures
	3rd	4.4 Applications of Oscilloscope (Voltage period & frequency measurement)
	4th	4.5 Operation of Digital Storage Oscilloscope
9th	1st	& High frequency Oscilloscope
	2nd	Unit-5: Bridges (11) 5.1 Types of Bridges (DC& Ac Bridges)
	3rd	5.2 DC Bridges (Measurement of Resistance by Wheatstone's Br
	4th	5.3 AC bridges (Measurement of inductance by Maxwell's Bridg
10th	1st	Hay's Bridge
	2nd	5.4 Measurement of capacitance by Schering's Bridge
	3rd	DeSauty Bridge.
	4th	5.5 Working principle of Q meter its circuit diagram
11th	1st	measurement of Low impedance
	2nd	5.6 Measurement of frequency
	3rd	5.7 LCR Meter & its measurements
	4th	5.7 LCR Meter & its measurements
12th	1st	Unit-6: Transducers & Sensors(11) 6.1 Parameter, method of Selecting and advantage of Electrical
	2nd	6.2 Working principle of Strain Gauges, define Strain Gauge (No
	3rd	6.3 Working principle of LVDT
	4th	6.3 Working principle of LVDT
13th	1st	6.4 Working principle of capacitive transducers (pressure)
	2nd	6.5 Working principle of Load Cell (Pressure Cell)
	3rd	6.6 Working principle of Temperature Transducer - RTD, Optical Pyrometer,
	4th	6.6 Working principle of Temperature Transducer - Thermocouple, Thermister
14th	1st	6.7 Working principle of Current transducer and KW Transducer
	2nd	6.8 Working principle of Proximity & Light sensors.
	3rd	6.8 Working principle of Proximity & Light sensors.
	4th	Unit-7: Signal Generator, Wave Analyser & DAS (05) 7.1 General aspect & classification of Signal generators
15th	1st	7.2 Working principle of AF Sine & Square wave generator .
	2nd	7.3 Working principle of the Function Generator
	3rd	7.4 Function of basic Wave Analyser& Spectrum Analyser
	4th	7.5 Basic concept of Data Acquisition System (DAS)



Signature of the Faculty