

Government Polytechnic for Women, Sirsa(Haryana)

Name of the faculty : Dr. Shikha Sukhija
 Discipline : ECE
 Semester : 2nd
 Subject : ELECTRONIC INSTRUMENTS AND MEASUREMENT
 Lesson plan Duration : 15 weeks (FEB 2024 to June 2024)

WORK LOAD PER WEEK (IN HOURS):- Lecture-03, Practical-04 per group

Week	Lecture Day	Theory (Topics)	Practical	Topic
1st	1	Measurement, method of measurement, types of instruments	1	Measurement of voltage, resistance and current using analog multimeter.
	2	Specifications of instruments: Accuracy, precision, sensitivity, resolution, range,		
	3	Errors in measurement ,sources of errors, limiting errors		
2nd	4	loading effect, importance and applications of standards and calibration	2	Measurement of voltage, resistance and current using digital multimeter.
	5	Principles of measurement of DC voltage, DC current,		
	6	Principles of measurement of AC voltage, AC current,		
3rd	7	Principles of operation and construction of permanent magnet moving coil (PMMC) instruments	3	To study the front panel controls of CRO
	8	Application, advantages and disadvantages of PMMC		
	9	Moving iron type instruments(attraction and repulsion type)		
4th	10	VOM Meter	4	Measurement of voltage, frequency, time period and phase using CRO
	11	Revision of Unit-1		
	12	Revision of Unit-2		
5th	13	Sessionals	5	VIVA
	14	Construction and working of cathode ray tube(CRT),		
6th	15	Basic block diagram of CRO and triggered sweep oscilloscope , front panel controls	6	Measurement of voltage, frequency, time and phase using DSO.
	16	specifications of CRO and their application		
	17	Measurement of current, voltage, frequency		

7th	18	Measurement of Time period and phase using CRO, Lissajous pattern for phase measurement	7	Measurement of phase using lissajous pattern on CRO.
	19	Block diagram and working principle of Digital storage oscilloscope (DSO)		
	20	Wheat stone bridge		
8th	21	AC bridges: Maxwell's induction bridge	8	Measurement of unknown resistance using Wheat Stone bridge.
	22	Hay's bridge		
	23	De Sauty's Bridge		
9th	24	Block diagram and working principle of Q meter	9	Measurement of Q of a coil
	25	Explanation of block diagram and specifications of low frequency		
	26	RF generators		
10th	27	Revision of Unit-3	10	VIVA
	28	Revision of Unit-4		
11th	29	Sessionals		
	30	Pulse generator		
12th	31	Function generator	12	Measurement of inductance using Maxwell Induction Bridge.
	32	Comparison of analog and digital instruments		
	33	Block diagram and working of a digital multi-meter		
13th	34	applications of digital multi-meter and their limitations	13	Measurement of capacitance using De Sauty's Bridge.
	35	Working principle of logic probe		
	36	Working principle of logic pulser		
14th	37	Revision of Unit-5	14	Use of logic pulser and logic probe
	38	Revision of Unit-1,2		
	39	Revision of Unit-3,4		
15th	40	Sessionals	15	VIVA