

Government Polytechnic, Mandi Adampur

Name of Faculty: Sh. Ravinder Kumar

Discipline: Electronics

Semester: 3

Subject: Electronic Instruments and Measurement

Lesson Plan Duration: 18 Week

Week	Theory		Practical	
	Lecture Day	Topic	Practical Day	Topic
Week 1	Day 1	Unit 1: Basics of Measurements	day 1	Measurement of voltage, resistance, frequency using digital multimeter
	Day 2	Measurement, method of measurement		
	Day 3	Types of instruments, Specifications of instruments: Accuracy, precision, sensitivity, resolution,		
Week 2	Day 4	Specifications of instruments: range, errors in measurement, sources of errors, limiting errors, loading effect,	day 2	File check
	Day 5	Importance and applications of standards and calibration		
	Day 6	Test Unit 1		
Week 3	Day 7	Unit 2: Voltage, Current and Resistance Measurement	day 3	Measurement of voltage, frequency, time period and phase using CRO
	Day 8	Principles of measurement of DC voltage		
	Day 9	DC current, AC voltage		
Week 4	Day 10	AC current	day 4	File check
	Day 11	Principles of operation and construction of permanent magnet moving coil (PMMC) instruments		
	Day 12	Principles of operation and construction of permanent magnet moving coil (PMMC) instruments		
Week5	Day 13	Principles of operation and construction of Moving iron type instruments,	day 5	Measurement of voltage, frequency, time and phase using DSO
	Day 14	Principles of operation and construction of Moving iron type instruments,		
	Day 15	Test Unit 2		
Week 6	Day 16	Unit 3:Cathode Ray Oscilloscope	day 6	File check
	Day 17	Construction and working of Cathode Ray Tube(CR		
	Day 18	Construction and working of Cathode Ray Tube(CR		
Week 7	Day 19	Block diagram description of a basic CRO		

	Day 20	Triggered sweep oscilloscope, front panel controls	day 7	Measurement of Q of a coil
	Day 21	Specifications of CRO and their explanation		
Week 8	Day 22	Specifications of CRO and their explanation	day 8	File check
	Day 23	Measurement of current, voltage, frequency		
	Day 24	time period and phase using CRO		
Week 9	Day 25	Digital storage oscilloscope (DSO) : block diagram	day 9	Measurement of resistance and inductance of coil using RLC Bridge
	Day 26	working principle		
	Day 27	Test Unit 3		
Week 10	Day 28	Unit 4: Impedance Bridge Q Meters	day 10	File check
	Day 29	Wheat stone bridge		
	Day 30	AC bridges: Maxwell's induction bridge		
Week 11	Day 31	Hay's bridge, De-Sauty's bridge	day 11	Measurement of impedance using Maxwell Induction Bridge
	Day 32	Schering bridge and Anderson bridge		
	Day 33	Block diagram description of laboratory type RLC bridge		
Week 12	Day 34	specifications of RLC bridge	day 12	File check
	Day 35	Block diagram and working principle of Q meter.		
	Day 36	Test Unit 4		
Week 13	Day 37	Unit 5: Signal Generators and Analytical Instruments	day 13	To find the value of unknown resistance using Wheat Stone Bridge
	Day 38	Explanation of block diagram specifications of low frequency and RF generators		
	Day 39	pulse generator		
Week 14	Day 40	function generator	day 14	File check
	Day 41	Distortion factor meter		
	Day 42	Distortion factor meter		
Week 15	Day 43	Instrumentation amplifier: its characteristics	day 15	Measurement of distortion using Distortion Factor Meter
	Day 44	need and working		
	Day 45	Test Unit 5		
Week 16	Day 46	Unit 6: Digital Instruments	day 16	File check
	Day 47	Comparison of analog and digital instruments		
	Day 48	Working principle of ramp, dual slope and integration type digital voltmeter		
Week 17	Day 49	Block diagram and working of a digital multi-meter	day 17	Use of logic pulser and logic probe
	Day 50	Specifications of digital multi-meter and their applications		
	Day 51	- Limitations of digital multi-meters.		
Week 18	Day 52	Working principle of logic probe, logic pulser	day 18	File check
	Day 53	logic analyzer and signature analyzer.		

