Lesson Plan

Name of Faculty : Devi Prassan
Discipline : Electronics & Comm. Engg.
Semester : 3rd
Subject : ELECTRONIC INSTRUMENTS AND MEASUREMENT
Lesson Plan Duration : 16 weeks

Work load (Lecture /Practical) per week (in hours): Lectures—03, Practical—03

Week	Theory		Practical	
	Lecture Day	Topic (Including Assignment/ Test)	Practical Day	Topic
1st	1	Measurement, method of measurement, types of instruments	1st	Measurement of voltage, resistance, frequency using digital multimeter
	2	Specifications of instruments Accuracy, precision		
	3	Specifications of instruments sensitivity, resolution, range, errors in measurement		
2nd	4	Sources of errors, limiting errors,	2nd	Measurement of voltage, resistance, frequency using digital multimeter
	5	Loading effect, importance and applications of standards and calibration		
	6	Assignment / test		
3rd	7	Principles of measurement of DC voltage	3rd	Measurement of voltage, frequency, time period and phase using CRO
	8	Principles of measurement of DC current		
	9	Principles of measurement of AC voltage		
4th	10	Principles of measurement of AC current	4th	Measurement of voltage, frequency, time period and phase using CRO
	11	Principles of operation and construction of permanent magnet moving coil (PMMC) instruments		
	12	Moving iron type instruments		
5th	13	Assignment	5th	Practical file Checking and viva-voice
	14	Revision / test		
	15	Construction and working of Cathode Ray Tube(CRT)		
6th	16	Block diagram description of a basic CRO and triggered sweep oscilloscope	6th	Measurement of voltage, frequency, time and phase using DSO
	17	Front panel controls		
	18	Specifications of CRO and their explanation		
7th	19	Measurement of current, voltage, frequency	7th	Measurement of voltage, frequency, time and phase using DSO
	20	Measurement of current time period and phase using CRO		
	21	Digital storage oscilloscope (DSO) block diagram and working principle		
8th	22	Problem Taking	8th	Measurement of Q of a coil
	23	Assignments		
	24	Wheat stone bridge		
9th	25	AC bridges: Maxwell's induction bridge	9th	Measurement of Q of a coil
	26	Hay's bridge, De-Sauty's bridge,		
	27	Schering bridge and Anderson bridge		
10th	28	Bock diagram description of laboratory type RLC bridge, specifications of RLC bridge	10th	

	29	Block diagram and working principle of Q meter		Practical file Checking and viva-voice
	30	Revision		
11th	31	Problem Taking	11th	Measurement of resistance and inductance of coil using RLC Bridge
	32	Assignment		
	33	Explanation of block diagram specifications of low frequency, RF generators		
12th	34	Pulse generator, function generator	12th	Measurement of impedance using Maxwell Induction Bridge
	35	Distortion factor meter		
	36	Instrumentation amplifier: its characteristics, need and working		
13th	37	Instrumentation amplifier need and working	13th	To find the value of unknown resistance using Wheat Stone Bridge
	38	Assignment		
	39	Comparison of analog and digital instruments		
14th	40	Working principle of ramp, dual slope	14th	Measurement of distortion using Distortion Factor Meter
	41	Working principle of integration type digital voltmeter		
	42	Block diagram and working of a digital multi-meter		
15th	43	Specifications of digital multi-meter and their applications	15th	Use of logic pulser and logic pobe
	44	Limitations of digital multi-meters		
	45	Working principle of logic probe, logic pulser analyzer		
16th	46	Working principle of logic analyzer and signature analyzer	16th	Revision
	47	Revision		
	48	Revision		