



GUJARAT TECHNOLOGICAL UNIVERSITY
Syllabus for Bachelor of Vocation (B.Voc.), 3rd Semester
Branch: Solar & Renewable Energy
Subject Name: Electrical Measurement & Instrumentation Lab
Subject Code: 1130705

Type of course: Under Graduate

Prerequisite: None

Rationale: In the field of Electronics, it is essential to know the functional aspects of several instruments useful in the process of signal measurement. Prior to the measurement, the process of signal conversion to equivalent electrical quantity and conversion of electrical quantity in one or the other forms are important steps. Basic practical concept of Sensors, transducers, bridges etc.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical		
				ESE (E)	PA(M)	ESE (V)	PA (I)	
0	0	4	2	0	0	30	20	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Contents:

Sr. No.	Practical / Hands on Exercise	Teaching Hrs.
1	To demonstrate usage of Digital multi meter to measured different Parameter.	4
2	Measurement of unknown resistance, inductance & capacitance by LCR meter.	4
3	To study & perform characteristics and use of LVDT.	8
4	To study measurement of temperature using RTD.	8
5	To study measurement of weight using strain gauge.	4
6	Measurement of unknown capacitance by Schering Bridge.	4
7	Measurement of unknown inductance by Maxwell's bridge.	4
8	To measure insulation resistance using megger.	4
9	To measure the power by using wattmeter.	8
10	To demonstrate usage of DSO for steady state periodic waveforms produced by a function generator.	8
	Total	56

Course Outcome:

Sr.No.	CO statement	Marks% weightage
CO1	Basics concept of different sensors	35
CO2	Comprehend practical use of digital instrument	25
CO3	Basic learning to measure different parameter.	20
CO4	Apply AC and DC bridges for measurement of electrical parameters.	20



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Major Equipment:

1. Different sensor
2. Digital Measuring Instruments.