BSP703P					BASIC INSTRUMENTATION AND CONTROL LAB					
Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
0	0	2	1	2	25	50	25	--	--	100

COURSE OBJECTIVES

- To understand the basic principle and calibration of temperature measurement instruments
- To understand the basic principle and calibration of flow measurement instruments
- To understand the basic principle and calibration of linear and angular displacement instruments
- To understand the basic principle and calibration of pressure and vibration measurement instruments

LIST OF EXPERIMENTS

1. Calibration of capacitive transducer for angular displacement.
2. Study and calibration of LVDT transducer for displacement measurement.
3. Calibration of Resistance Temperature Detector (RTD) for temperature measurement.
4. Calibration of Thermistor for temperature measurement.
5. Calibration of Thermocouple for temperature measurement.
6. Study and calibration of Photo speed pickups for the measurement of speed.
7. Calibration of Pressure Gauges.
8. Study and calibration of a Rotameter for flow measurement.
9. Study and calibration of Magnetic speed pickups for the measurement of speed.
10. Study and use of a Seismic pickup for the measurement of vibration amplitude of an engine bed at various loads.

COURSE OUTCOMES

On completion of the course, student will be able to
CO1 - Apply the basic principle of instrumentation, its control and calibration in day to day life.
CO2 - Apply the concept of instrumentation and control for designing scientific and engineering instruments.
CO3 - Interpret the functioning of instruments by acquired knowledge in this course.
CO4 - Identify the problems in instrumentation due to mismatched calibration.
CO5 - Solve the problems in instrumentation by using the knowledge acquired.
CO6 - Analyse the complex scientific and engineering problem and suggest its instrumentation.

TEXT/REFERENCE BOOKS

1. D. S. Kumar, Measurement Systems: Applications & Design, Anuradha Agencies, 1st Edition, 2013.

2. C. Nakra, K. K. Choudhary, Instrumentation, Measurement & Analysis, Tata McGraw Hill, 1st Edition, 2013.