

Subject Code: 2SC1000225	Subject Title: Instrumentation Measurement and analysis
Course Type: Subject Elective	

COURSE OBJECTIVE:

This course is designed to learn usage of various instruments used in laboratory.

LEARNING OUTCOMES:

- Develop an actual understanding about Measurement.
- To know the basic Applications of various instruments in laboratory.

Teaching scheme (hours) per week		credit		Theory Examination		Practical Examination		Total
Theory	Practical	Theory	Practical	University	Cont. Assessment	University	Cont. Assessment	
2	---	2	---	35	15	---	---	50

Unit	Content	Lectures	Wt.(%)
1	Vernier Calipers : Introduction, Theory, Figure, Description of the instrument, Detail study of Least count, Errors, Positive Error, Negative Error, Determination of Magnitude of Positive and Negative Errors. Micrometer Screw : Introduction, Theory, Figure, Description of the instrument, Definition of pitch and its Determination, study of least count, Meaning of the Error and explanation of positive and negative Errors, Determination of positive and Negative Errors, Method of taking observation with the help of micrometer screw. Spherometer : Introduction, Theory, Figure, Description of the instrument, to determine the pitch of the screw, To Determine the Least count of the Spherometer, Zero Error, Derivation of Formula for the Radius of Curvature Of Curved Surface.	7	50
2	Wheastone Bridge : Introduction, Theory with Figure, The Figure of Meter Bridge used in Laboratory, Construction of Meter Bridge. Construction of Galvanometer : Introduction, Theory, Sensitivity and Figure of merit of Galvanometer. Ammeter, Voltmeter, and Ohmmeter: Understanding the structure of the ammeter, voltmeter, and ohmmeter. Learning how to use those meters and using them to measure the current, voltage, and resistance of an electric circuit.	7	50

Basic Reference book:

1. Experimental book for Physics.
2. Chapter 8 in the web site of "All about circuits",
http://www.allaboutcircuits.com/vol_1/chpt_8/1.html