

SARDAR PATEL UNIVERSITY
Programme: B.Sc
Semester: I
Syllabus with effect from: June-2011

Paper Code: US01CINV02	Total Credit: 2
Title of Paper: Instrumentation System - I	

Unit	Description in Detail	Weightage (%)
I	Introduction to Instruments: Typical applications of instrument systems, Functional elements of measurement systems, Classifications of Instruments – Null and Deflection types, Manually operated and Automatic types, Analog and Digital types, Self Generating and Power operated types.	25%
II	Measurements and Errors: Definition, Accuracy and Precision, Types of errors – Gross errors, Systematic errors, Random errors, Statistical analysis – Arithmetic mean, Deviation from mean, Average deviation.	25%
III	Systems of Units of Measurement – Fundamental and derived Units, System of Units, Electrical & Magnetic Units, International System of Units, Other Systems of Units, Conversion of Units,	25%
IV	Standards of Measurements – Classification of Standards, Standards for Mass, Length and Volume, Time and Frequency standards, Electrical standards.	25%

Basic Text & Reference Books:

- Instrumentation Measurement and Analysis by B. C. Nakra, K. K. Chaudhary.
- Modern Electronics Instrumentation & Measurement Techniques by A. D. Helfrick, W. D. Cooper.

