

SARDAR PATEL UNIVERSITY
Programme: B.Sc
Semester: III
Syllabus with effect from: June-2012

Paper Code: US03EELE02	Total Credit: 2
Title of Paper: Instrumentation	

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 & digital types, self generating and power operated types.	
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.	
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.	
IV	Direct current indicating instruments- Suspension galvanometer torque & Deflection of galvanometer PMMC- Mechanism, DC ammeter, shunt Resistor, aytron shunt dc voltmeter, voltmeter sensitivity, multimeter.	

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

