

SARDAR PATEL UNIVERSITY
Programme & Subject: B.Sc
Semester: IV
Syllabus with Effect from: November - 2012

Paper Code: US04EELE02	Total Credit: 2
Title Of Paper: Instrumentation	

Unit	Description in detail	Weightage (%)
I	Transformer: Working principle, construction, core type transformer, shell type transformer, theory of ideal transformer, EMF equation of transformer, voltage transformation ratio, transformer with losses, transformer with winding resistance, equivalent resistance, magnetic leakage, transformer with resistance and leakage reactance, equivalent circuit.	25%
II	Relay & Contactors: Electromechanical relay, solid-state relay, timing relay, latching relay, relay logic, specifications and rating, Contactors: Size, rating. Input devices: temperature switch, proximity switch, pressure switch.	25%
III	Introduction of Transducer Introduction, classification of transducers, Performance characteristics of transducers, static characteristics, dynamic characteristics, other characteristics.	25%
IV	Application of Transducer Potentiometric transducer, variable capacitance, linear variable differential transformer (LVDT), linear to angular encoders, Piezo-electric transducers, other displacement sensors	25%

Basic Text & Reference Books:-

- Electrical Machines Vol-1: B.L.Thareja.
- Instrumentations measurements and analysis: B.C.Nakra and K.K.Choudary.
- Electronics and Electrical measuring Instruments: A.K.Sawhney

