SARDAR PATEL UNIVERSITY
Programme & Subject: B.sc (Instrumentation)
Semester: VI
Syllabus with Effect from: November/December - 2013

Paper Code: US06CINS02	**Total Credit: 3**
Title Of Paper: Process Measurement Technique - II	

Unit	Description in detail	Weighting (%)
I	**Flow Measurement: I** Flow of fluid in pipes & Bernoulli's equation, nature of flow, Head flow meters: Orifice plate, Venturimeter, Venturi nozzle, Pitot tube, Multiplying pitot tube, Variable Head flow meter: Rotameter. Quantity meters: Piston type, Nutating disk meter, Rotary vane type.	25%
II	**Flow Measurement: II** Open Channel meters: Rectangular weir, V-notch weir, Trapezoidal weir, Electrical type flow meters: Turbine type, Electromagnetic flow meter, Hot wire anomometer, Ultrasonic method, Mass Flow measurement.	25%
III	**Force and Torque Measurement:** Force: Hydraulic force meter, Pneumatic force meter, Proving ring, Strain gauge load cell, Pressductors load cell. Torque: Inline rotating torque meter, inline stationary torque meter, Proximity sensors.	25%
IV	**Speed Measurement:** Speed: Revolution Counter, Tacho-scope, Slipping clutch tachometer, Centrifugal force techometer, Drag cup, Contact less electrical tachometers, Tacho-generators.	25%

Basic Text & Reference Books:-

- Process instrumentation by D.P. Eckman
- Mechanical measurement and control by D.S. Kumar
- Principles of industrial instruments by Patranabis
- Instrumentation measurement and analysis by Nakara and Chaudhary
- Principles of measurement and instrumentation by A.S. Morris