

SARDAR PATEL UNIVERSITY
Programme & Subject: B.Sc (Industrial Chemistry)
Semester: VI
Syllabus with Effect from: November-2013

Paper Code: US06CICH05	Total Credit: 3
Title of Paper: Industrial Instrumentation & Process Control	

Unit	Description in detail	Weightage (%)
I	Concept of measurement and accuracy, Principle ,construction and working of temperature measuring instruments, Expansion thermometer, Thermoelectric temperature measurement, Resistances thermometers, Pyrometers.	25%
II	Pressure Terms, Bourden pressure gauge, Bellow type and Diaphragm type pressure gauge, Vacuum measurement, Calibration of pressure gage, Direct and indirect method of level measurement, Sp. Gravity scales, Density and sp.Gravity measurement, Viscosity measurement.	25%
III	Flow measurement - classification of instruments, Differential pressure and differential area meters, Open channel flow measurement.	25%
IV	Control system, Terminology, Manual and automatic control, Open and closed loop control, Process time lags, Modes of control actions, Final Control Element. Indicators, Recorders, Control panels and Control center, instrumentation diagram, Pneumatic and electrical transmission system.	25%

Basic Text & Reference Books:

- Industrial Instrumentation by Donald P Eckman (Wiley Estern Ltd.)
- Mechanical & Industrial Measurement by R. K. Jain (Khanna Publishers)
- Industrial Instrumentation & Process Control by Kulkarni (Nirali Prakashan - Pune)
- Process Instrumentation & Control Handbook - Douglass M Considine. (McGraw - Hill, Inc., New Delhi)
- Instrumentation Technology(volume iii) E.B. John

