

SARDAR PATEL UNIVERSITY
Programme: B.Sc (Instrumentation-Vocational)
Semester: VI
Syllabus with effect from: June - 2013

Paper Code: US06CINV02	Total Credit: 3
Title of Paper: Control Techniques - II	

Unit	Description in detail	Weightage (%)
I	Advanced Process Control Strategies Block Diagram Representation of Process Control Systems, Types of Process Control Systems: Open - Loop Control System, Feedback Control System, Feedforward Control System, Cascade Control System, Ratio Control System, Analog and Digital Control Systems, Linear and Non - Linear Control Systems; Application Based Classification of Control Systems	25%
II	Programmable Logic Controllers (PLCs) Introduction to Microcomputers, Programmable Controllers, Programmable Logic Controllers (PLCs): PLC Architecture, Basic Structure, PLC Programming, Ladder Diagram: Symbols, Circuit; PLC Communication and Networking, PLC Selection: I/O Quantity and type, I/O Remoting Requirements, Memory Size and Type, Programmer Units, PLC Installation, Advantages of Using PLCs	25%
III	Distributed Control System (DCS) Introduction, Overview of DCS: Operator's Console, Video Display, Keyboard, Information Displays; DCS Software Configuration, DCS Communication, DCS Supervisory Computer Tasks, DCS Integration with PLCs and Computers, Features of DCS, Advantages of DCS	25%
IV	Selection, Installation, & Commissioning of Instruments Introduction, Selection of Instruments: Reliability of Measurement System, Total Lifetime Operating Cost of Measurement System; Installation and Commissioning of Instruments: Storage and Protection, Mounting and Accessibility, Piping Systems, Air Supplies, Pneumatic Signals, Impulse Lines, Cabling, Earthing, Testing and Pre - Commissioning, Plant Commissioning.	25%

Basic Text & Reference Books:

- Industrial Instrumentation and Control By S. K. Singh
- Computer - Based Industrial Control By Krishna Kant
- Control System By Nagrath and Gopal
- Industrial Electronics By Petruzella
- Control Systems By K. Padmanabhan

