

SARDAR PATEL UNIVERSITY
Programme & Subject: B.sc (Instrumentation)
Semester: V
Syllabus with Effect from: June - 2013

Paper Code: US05CINS04	Total Credit: 3
Title Of Paper: Programmable Logic Controller (PLC) - I	

Unit	Description in detail	Weighting (%)
I	Ladder Diagram Fundamentals - 1 Introduction, Basic Components and Their Symbols: Control Transformers, Fuses, Switches, Indicator Lamps, Relays, Time Delay Relays	25%
II	Ladder Diagram Fundamentals - 2 Fundamentals Of Ladder Diagrams: Basic Diagram Framework, Wiring, Reference Designators, Boolean Logic And Relay Logic, And, Or, And Or And Or And, Ground Test, The Latch, Two - Handed Anti - Tie Down, Anti Repeat, Single Cycle, Combined Circuit, Master Control Relays And Control Zones; Machine Control Terminology	25%
III	The Programmable Logic Controller (PLC) Introduction, A Brief History, PLC Configurations, System Block Diagram, Update - Solve the Ladder - Update, Update, Solve the Ladder	25%
IV	Fundamental PLC Programming Introduction, Physical Components Vs Program Components, Example Problem - Lighting Control, Internal Relays, Disagreement Circuit, Majority Circuit, Oscillator, Holding Contacts, Always - ON and Always - OFF Contacts, Ladder Diagram Having More Than One Rung	25%

Basic Text & Reference Books:-

- Programmable Logic Controllers (Programming Methods and Applications) By John R. Hackworth & Frederick D. Hackworth, Jr.
- Automatic manufacturing system using PLCs By Jack Hugh
- Programmable Logic Controller By Petruzella
- Introduction to programmable logic controller By Thomas Hughes

