

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: 1

Instrumentation and Control Engineering

(Applied Instrumentation)

Subject Name: PROGRAMMABLE LOGIC CONTROLLER (Institute Level Elective -1)

Sr.No	Course content
1.	PLC Basics: An Overall Look At Programmable Logic Controllers, The PLC : A Look Inside, General PLC Programming Procedures, Devices To Which PLC Input And Output Modules Are Connected
2.	Basic PLC Programming: Programming On/Off Inputs To Produce On-Off Outputs, Relation Of Digital Gate Logic to Contact/Coil Logic, Creating Ladder Diagrams From Process Control Descriptions
3.	Basic PLC Functions: Register basics, PLC Timer Functions, PLC Counter Functions
4.	Intermediate Functions: PLC Arithmetic Functions, PLC Number Comparison Functions, Numbering Systems And PLC Number Conversion functions
5.	Data Handling Functions: The PLC Skip And Master Control Relay Functions, Jump Functions, PLC Data Move Systems, Other PLC Data Handling Functions
6.	PLC Functions Working With BITS: PLC Digital Bit Functions And Applications, PLC Sequencer Functions, Controlling A Robot With A PLC, PLC Matrix Functions
7.	Advanced PLC Functions: Analog PLC Operation, PID Control of Continuous Processes, PLC networking

Reference Books:

- (1) Programmable Logic Controllers--principles And Applications 5th Edition, By John Webb and Ronald Reis (PHI)
- (2) Programmable Controllers 4th Edition, by Thomas A. Hughes
- (3) Programmable Logic Controllers by W. Bolton