

EE429 PROGRAMMABLE LOGIC CONTROLLERS (Dept. Elective - IV)

Course Description & Objectives:

This course deals with importance of PLC and its components. It also deals with Ladder Programming and various functions available.

Course Outcomes:

- I Able to understand the importance of PLC
- I Able to convert Digital Circuits into PLC program
- I Able to simplify the PLC program using various library functions
- I Able to program PLC for a specific application

UNIT I - PLC Basics:

PLC system, I/O modules and interfacing, CPU processor, programming Equipment, programming formats, construction of PLC ladder diagrams, Devices connected to I/O modules.

PLC Programming: Input instructions, outputs, operational procedures, programming examples using contacts and coils. Drill press operation.

UNIT II - Logic Circuits:

Digital logic gates, programming in the Boolean algebra system, conversion examples, Ladder Diagrams for process control: Ladder diagrams & sequence listings, ladder diagram construction and flowchart for spray process system.

UNIT III - PLC Registers:

Characteristics of Registers, module addressing, holding registers, Input Registers, Output Registers.

UNIT VI - PLC Functions:

Timer functions & Industrial applications, counters, counter function industrial applications, Arithmetic functions, Number comparison functions, number conversion functions

UNIT V - Data Handling functions:

SKIP, Master control Relay, Jump, Move, FIFO, FAL, ONS, CLR & Sweep functions and their applications

TEXT BOOKS:

1. Programmable Logic Controllers- Principles and Applications by John W. Webb & Ronald A. Reiss, Fifth Edition, PHI
2. Programmable Logic Controllers- Programming Method and Applications – JR.Hackworth & F.D Hackworth Jr. –Pearson, 2004