SEMESTER	***DEPARTMENT***	***COURSE TITLE***
Seventh	*Control Engineering*	*Programmable Logic Controller Lab*
COURSE CODE	***HOURS**:* 3	***COURSE SPECIFICATIONS***
EC708	***UNITS**:* 1	*Practical Content*

1. ***To be Familiar with PLC Hardware:***

- Input and Output Wiring.
- Interfacing with Sensors/Actuators.
- Timers and Counters.
- Types of Memories.
- Power Supplies.

2. ***Programming PLC with Ladder Diagram for Practical Applications:***

- The Basic Steps for Building a Program in Ladder Diagram (LD).
- Accessing Memory Addresses using Computer Software.
- Implementing Logic Functions in Ladder Diagram.
  - AND, OR, XOR, and NAND Gates.
- Implementing Latching Circuit with Start and Stop Buttons.
- Boolean Expressions using Ladder Diagram Programs.
- Rising Edge and Falling Edge Program.

3. ***PLC Applications (such as :)***

- Traffic Light Control using On-Delay Timer or Off-Delay Timer Instruction.
- Programming a Parking Garage Controller using Up/Down Counter Instruction.
- Tank Level Control.
- Stepper Motor Control.
- Conveyer Built Control.
- Mixer for Liquids Control
- Starting of 3- phase motor.
- Star Delta Starter Control.
- Electrical Elevator Control.

References:

1. ***Programmable Logic Controllers,*** W. Bolton, 4th ed. 2006.
2. ***Programmable Logical Controller***, J. W. Wabb, 1994.
3. ***Programmable Logic Controller,*** C. Simpson, 1993.
4. ***PLC and their applications,*** A. Crispin, 1990.