

# **J.C. Bose University of Science and Technology, YMCA Faridabad**

## **Department of Electrical Engineering**

### **PLC LAB**

A Programmable Logic Controller (PLC) belong to the group of systems for management of processes with the name - Industrial Control Systems. PLC is an industrial computer finds its application for automation of electromechanical processes.

#### **OBJECTIVES OF PLC LAB**

The PLC lab aims at providing the students and faculty with the capability of working with Programmable Logic Controller technology that is at par with the industry. The main goal of this lab is to give the student a high-quality training on PLC programming that will develop their skills both in programming as well as hardware in PLC and be more employable in industry .The primary objective of the PLC Lab is to familiarize students with how signals from input devices (i.e. switches, sensors etc) can interface with PLC units in order to invoke certain actions (i.e. start/stop an electric motor, turn on a light etc)

#### **EQUIPMENTS**

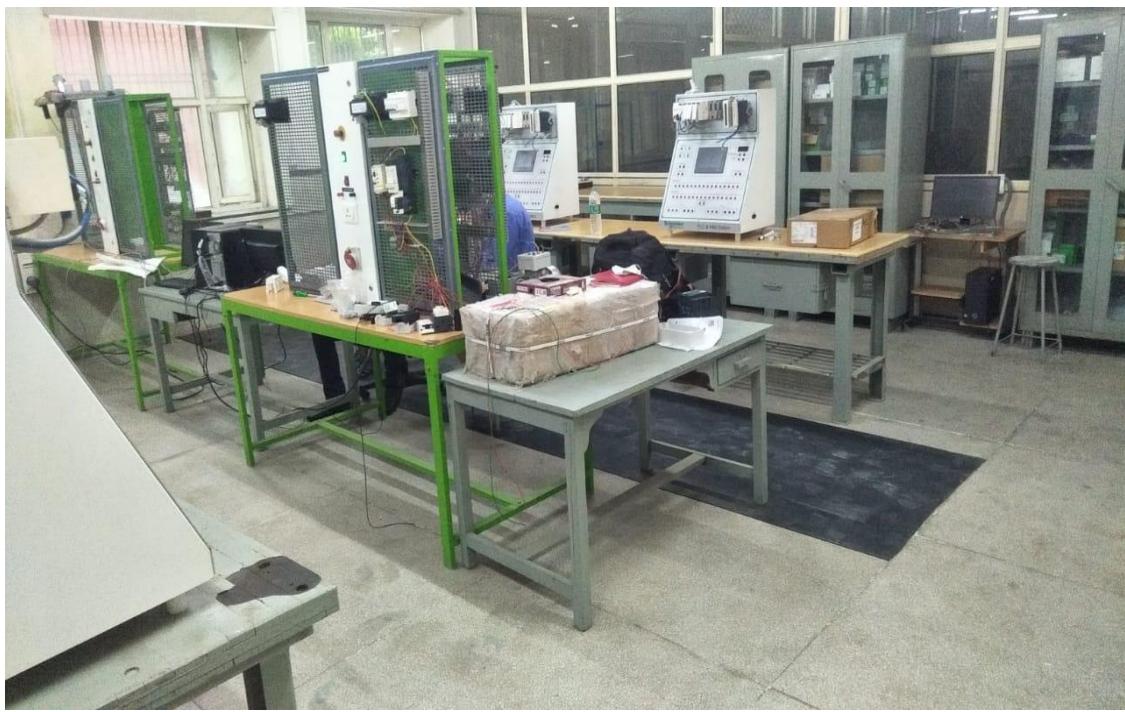
The PLC lab contains multiple workstations equipped with computers, PLC units and other interfacing devices to train students how to program and upload ladder logic code. Students program ladder logic code using the Unity Pro software, which provides a graphical interface representing conditional computer programming functions such as if/else statements. The lab is based primarily on the Schneider Electric family of Programmable Logic Controllers, which are widely used in factories and other settings.

<b>Sr. No.</b>	<b>Name of the Equipment</b>	<b>Make &amp; Model</b>	<b>Qty</b>
1	Training Kit for HMI+PLC	SI-IA 2	5
2	Sensor Pack	SI-IA 3	5
3	Unity Pro Team License for 10	SI-IA License	2

## LEARNING OUTCOMES

- Exposure to the technology pf Programmable Logic Controllers (PLC) and understanding the importance of automation in industries.
- Software programming of PLC like ladder logic and instruction logic
- PLC simulation on Unity Pro software
- Implementing industrial communication
- Designing and programming a human machine interface using Vijeo Designer
- Operation of system through physical system (Control Stations) and digital interface (HMI)
- Studying different sensors, connecting to the PLC, scaling and parameterization of sensors
- Creating sequences with a closed loop feedback system

## GLIMPSE OF PLC LAB





**Dr. Sakshi Kalra, (Assistant Professor)  
PLC Lab In-Charge**