Sandip foundation's

# Sandip Institute of Technology and Research Centre, Nashik

## Department of Electrical Engineering

CGPA Score:3.11

Date: 15/03/2022

# Notice

Department of Electrical Engg is going to conduct free of cost VAP on "Introduction to PLC" on date **21/03/2022 To 26/03/2022** for TE student's. Interested students enroll their name to Prof.Sharmila M before **20/03/2022.**

Time: 10:30 AM To 5.00PM

Venue: TE Class Room Electrical Engineering Dept SITRC

HOD
Electrical

Principal
SITRC

Head of Department
Electrical Engineering
Sandip Institute of Technology and Research Centre
Mahiravani, Nashik-422213

Electrical Engineering Department SITRC, Nashik

SANDIP FOUNDATION

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(Chairman, Sandip Foundation, Nashik)

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**Dr. S. T. Gandhe**
(Principal, SITRC, Nashik)

**CONVENER**
**Dr. N.S.Patil**
(HOD, Department of Electrical Engineering, SITRC, Nashik)

**CO-ORDINATOR**
**Prof.R.B.Sadaphale**
Asst. Professor, Dept. of EE Engineering

**ORGANIZING COMMITTEE**

Prof.Gopal G.Akotkar

Prof.Anand V. Satpute

**RESOURCE PERSON**

Prof. Sharmila M
Asst Prof., Dept. of EE Engineering

Venue and Time

Electrical Engineering Dept
Time: 10AM To 5.00PM
21/03/2022 to 26/03/2022

# Five Days

# Value added Program

on

# *"Introduction to PLC"*

*Date:* 21/03/2022 to 26/03/2022

Organized By,

**Department of Electrical Engineering, Sandip Institute of Technology and Research Centre, Nashik- 422213.**

## ABOUT INSTITUTE

Sandip Institute of Technology and Research Center (SITRC), the top Engineering colleges in Nasik, Maharashtra is established in 2008 and is approved by AICTE, New Delhi and affiliated to Savitribai Phule Pune University, Pune. The Institute is accredited by NAAC with A Grade (CGPA 3.11 Score).

SITRC have an ambiance that stimulates intellectual thinking and academic proceedings.

The institute has following major credentials at its credit.

- √ Accredited with A Grade by NAAC
- √ Affiliated to SPPU Pune
- √ Green and Clean Campus

## ABOUT DEPARTMENT

The department of Electrical Engineering at Sandip Institute of Technology and Research Centre offers a vibrant environment for undergraduate education. Established in 2014, it is one of the departments at SITRC. Electrical engineering is a field of engineering that generally deals with the study and application of electricity, electronics, and electromagnetism. It has experienced and qualified teaching staff members and teaching assistants. The department has well equipped 10 laboratories which include Electrical Machine, Network Analysis, Control System, Computer lab, Switchgear and Protection, Power,Electronics, High Voltage Engineering, PLC and SCADA with Latest Software to name a few.

## DEPARTMENT VISION

To become a front-runner in bringing out competent electrical engineers, innovators and researchers there by contribute value to the knowledge-based economy and society

## DEPARTMENT MISSION

To provide the state-of-art resources that contribute to achieve excellence in teaching-learning, research and development activities.

To bridge the gap between industry and academia by arranging Industrial Visits and organizing value added Programme.

To provide Suitable forums to enhance the creative talents of students and faculty members.To inculcate moral and ethical values among the faculty and students.

## COURSE CONTENTS

**Module 1] PROGRAMMABLE LOGIC CONTROLLER (PLC)**

Introduction to PLC hardware, Architectural Evolution of PLC, Role of PLC in automation, Introduction to the field devices attached to PLC, PLC Fundamentals - (Block diagram of PLC's), Detail information about PLC components, Power supply, CPU, I/O modules, Communication bus, Various ranges available in PLCs, Types of Inputs & outputs, Source Sink Concept in PLC, Concept of flags, Scan cycle Execution

**Module 2] INTRODUCTION TO PLC PROGRAMMING SOFTWARE Part 1**

Addressing concepts, Introduction to bit, byte & word concept, Programming instructions arithmetic and logical, Load /and /or/out / and Read / Write, Compare / Add / Sub /And /Or – Blocks, Leading edge / trailing edge instructions, MOVE block application, Timer Blocks programming, Counter Block programming, Advanced instructions, File handling, Comment functions, Master control /set /reset function, Upload, download, Monitoring of programs, Forcing I/P & O/P, Monitoring / Modifying data table values.

**Module 3] INTRODUCTION TO PLC PROGRAMMING SOFTWARE Part 2**

Standard procedure to be followed in wiring / writing ladder etc, Hands on experience on writing programs. Case studies for conveyer, motors control, timer & counter applications etc., Troubleshooting and fault diagnostics of PLC, Documenting the project, Program assignments for real time applications.

**Module 4] ELECTRICAL AND ELECTRONIC BASICS**

Basic Electricity, Electrical Terms and Definition, Capacitors, Conductors and Inductors, Ohm's Law, Series and Parallel connection, AC and DC Principles, Reading Electrical diagrams, Cables and Wiring, Types of Cables and wiring, Termination and jointing of cables, Working with Site Plans and Symbols, L. V. Switchgear, Push Buttons, Limit switches, Contactors, Bi metal Relays, Fuses, MCB, ELCB, Basic Electronics.

**Module 5] Projects Experiments**

## IMPORTANT DATES

**Last Date of Registration:**
20/03/2022
***Date:*** 21/03/2022 To 26/03/2022

## *No Registration Fee*


*Contact Person*
*1)Prof.A.V.Satpute*
*Contact No: 8888870943*
*2)Prof.R.B.Sadaphale*
*Contact No:9552556199*

**Theory Course Content- Topics covered during the Value Added Program-**
**Topics to be covered**

**Module 1] PROGRAMMABLE LOGIC CONTROLLER (PLC)**

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**Module 5] Projects/Experiments**

## Program Agenda-

| Day | Time | Program | Topic |
|---|---|---|---|
| 1 | 10 am To 1 pm | Morning session | **Module 1] PROGRAMMABLE LOGIC CONTROLLER (PLC)** |
| | 1 pm To 2 pm | Lunch Break | ---------- |
| | 2 pm To 5 pm | Evening Session | **Module 1] PROGRAMMABLE LOGIC CONTROLLER (PLC)** |
| 2 | 10 am To 1pm | Morning session | **Module 2] INTRODUCTION TO PLC PROGRAMMING SOFTWARE Part 1** |
| | 1 pm To 2 pm | Lunch Break | ---------- |
| | 2pm To 5 pm | Evening Session | **Module 2] INTRODUCTION TO PLC PROGRAMMING SOFTWARE Part 1** |
| 3 | 10 am To 1pm | Morning session | **Module 3] INTRODUCTION TO PLC PROGRAMMING SOFTWARE Part 2** |
| | 1 pm To 2 pm | Lunch Break | ---------- |
| | 2pm To 5 pm | Evening Session | **Module 3] INTRODUCTION TO PLC PROGRAMMING SOFTWARE Part 2** |
| 4 | 10 am To 1pm | Morning session | **Module 4] ELECTRICAL AND ELECTRONIC BASICS** |
| | 1 pm To 2 pm | Lunch Break | ---------- |
| | 2pm To 5 pm | Evening Session | **Module 4] ELECTRICAL AND ELECTRONIC BASICS** |
| 5 | 10 am To 1pm | Morning session | **Module 5] Projects/Experiments** |
| | 1 pm To 2 pm | Lunch Break | ---------- |
| | 2pm To 5 pm | Evening Session | **Module 5] Projects/Experiments** |

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SANDIP FOUNDATION
# Sandip Institute of Technology and Research Centre, Nashik
## Department of Electrical Engineering
NAAC A CGPA Score : 3.11

## VAP Report
## Academic Year 2021-22

**Name of the Event:** VAP on " Introduction to PLC"
**Event Date:** 21/03/2022 To 26/03/2022
**Event Conduction Duration:** 10.00 am to 5.00 pm
**No of Participants:** BT: 56 Students
No of Hours Duration : 32
**Name of Event Coordinator:** Prof.Sharmila M (Asst.Prof - Electrical Dept., SITRC, Nashik)

## Course Objective:

1] **Understanding PLCs:** To introduce students to the basic concepts of PLCs, their history, and their role in industrial automation. This includes learning about the various components of a PLC system, such as input and output modules, CPU, and programming software.
2] **PLC Programming:** To teach students how to write and troubleshoot ladder logic programs, which are commonly used for programming PLCs. Students should gain proficiency in designing control logic for various industrial applications.
3] **PLC Hardware and Wiring:** To provide practical knowledge of PLC hardware, wiring, and connection of input and output devices. This involves understanding the types of sensors and actuators used in industrial control and their integration with PLCs.
4] **Introduction to SCADA:** To introduce students to SCADA systems, explaining their role in monitoring and controlling industrial processes. This includes understanding the architecture of SCADA systems, communication protocols, and data visualization.
5] **SCADA Software:** To familiarize students with SCADA software tools used for creating human-machine interfaces (HMI) and data acquisition. Students should learn how to configure SCADA software to communicate with PLCs.

## Course Outcomes:

On successful completion of this course, a student will be able to:

1] **Understanding of PLC Basics:** Gain a solid understanding of what PLCs are, their components, and their role in industrial automation.

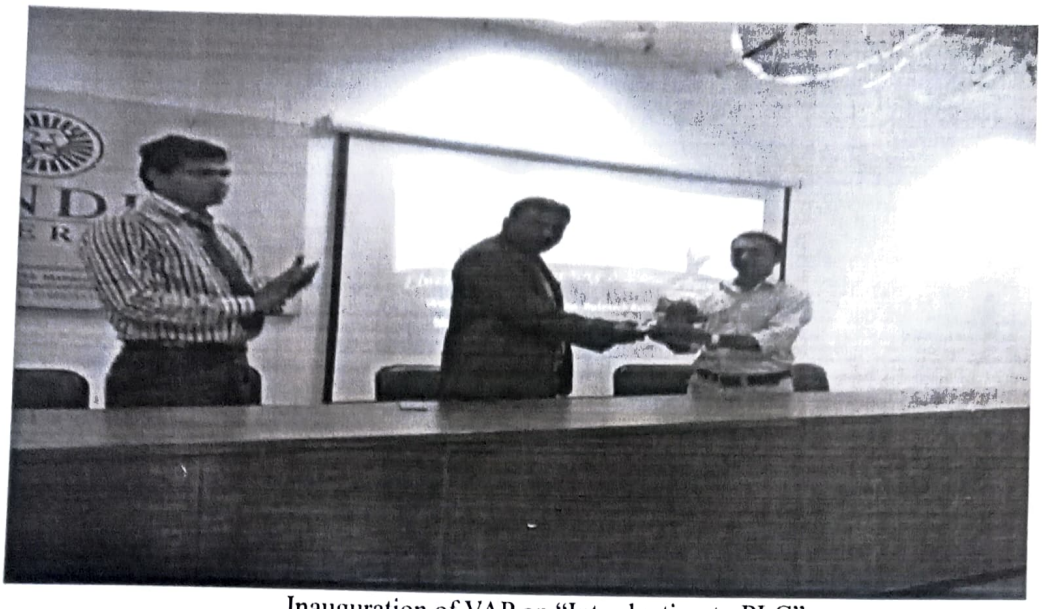
2] **PLC Programming:** Learn how to program PLCs using languages like ladder logic, function block diagram, or structured text.

3] **PLC Wiring and Hardware:** Acquire practical skills related to PLC hardware, wiring, and configuration.

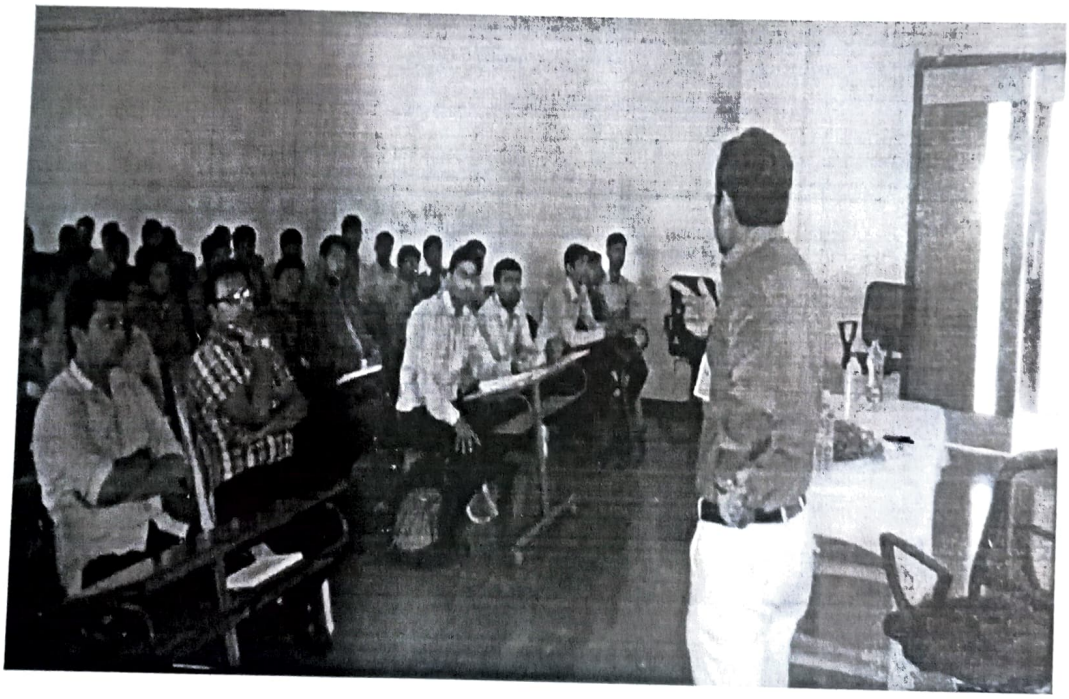
4] **PLC Communication:** Understand how PLCs communicate with other devices and systems, both locally and over networks.

5] **SCADA Systems:** Gain knowledge about SCADA systems, their functions, and how they integrate with PLCs.

**Event Photos:**



Inauguration of VAP on "Introduction to PLC"



**Students of BE** Electrical attending VAP on "Introduction to PLC"