

Report on Hands-On Workshop on Basics of PLC

Organized by:

Department of

*Instrumentation and Control Engineering
L. D. College of Engineering - Ahmedabad*

Date: 04 to 06 April 2024

Coordinated By :

Dr. V. H. Trivedi & Prof. H. K. Shastri

Assistant Professor - IC

Venue:

*Tagor seminar hall (IC Dept) &
Centre of Excellence- Automation Lab*

Overview

The PLC workshop organised by IC Department of L. D. College of Engineering was like a bridge course for other branches for automation. Over three days, students dove deep into the world of Programmable Logic Controllers, learning not just the basics, but also how they're applied in real-world situations. The expert faculties made sure everyone got hands-on experience. All the participants grasped the ideas and started tinkering with the logic and the PLC. By the end of the workshop, participant shared learning outcomes through experiment performed. Workshop wasn't just about technical knowledge, it also sparked creativity and problem-solving skills.

Participants left with a newfound confidence in their abilities to tackle challenges in the field of automation and control systems. The success of the workshop wasn't just measured in attendance numbers; it was evident in the enthusiasm and passion it ignited among the students. It was a testament to the power of hands-on learning and the importance of practical education in preparing the next generation of engineers.

Day 1

The workshop commenced with a warm welcome and formal introductions by Prof. Harsh K. Shastri and Dr. Vandana H. Trivedi, setting a positive tone for the event. Dr. Manish Thakker, HOD of the IC department, delivered an inspiring address, motivating participants to actively engage and make the most of the learning opportunity.



The morning session focused on laying the foundation, covering topics such as the basic background of PLC, its applications in industry and automation, PLC hardware, integration, sensors, and feedback devices. Participants gained a deeper understanding of the automation pyramid, exploring different levels and the structure of PLC systems.



In the afternoon session, participants delved into practical exercises, learning about relay use and undertaking ladder programming of simple problems. The hands-on experiments conducted at CoE lab on Siemens S7-300 and S7-1200 PLC systems, which provided valuable insights into real-world PLC programming.

Day 2



During the morning session, the workshop introduced to logic gates like AND, OR, NOT, XOR, and NAND, explaining how they function with simple truth tables. Participant learned how these gates form the building blocks of PLC programming. The hands-on activities helped us grasp the concepts quickly, making it easier to understand how to apply them in real-world scenarios.

After learning the theory, it was time to get hands-on. Using TIAV12 with S7/300, participants practiced what they learned by doing logical programming exercises. This practical part helped them understand how to use PLCs in real situations, making them more confident for future tasks.



Day 3

The final day of the workshop focused on advanced operations and functions of PLCs. Participants learned about timing, sequencing, counters, and different mathematical functions like addition, subtraction, and equality testing. The practical application of these concepts was demonstrated in the afternoon session, further reinforcing participants' understanding of PLC functionality.



The workshop concluded with an uplifting ceremony, graced by Dr. Nilay N. Bhuptani, our principal, who offered words of encouragement and motivation to all participants. Dr. V.B. Patel, HOD of the Mechanical Engineering Department, commended the initiative taken by the IC department in organizing this workshop, highlighting its significance for mechanical engineering students. Dr. Sheetal Pandya, from the Mechanical Engineering department, was recognized for her coordination efforts.



Certificates were distributed to participants by the principal sir, marking the successful completion of the workshop.



Conclusion:

The 3-day hands-on workshop on PLC Basics served as a platform for knowledge dissemination and practical skill development in the field of automation and control engineering. Through a combination of theoretical sessions and practical exercises, participants gained a comprehensive understanding of PLC technology and its applications in industry. The event received positive feedback from both participants and faculty, affirming its effectiveness in fulfilling educational objectives and fostering interdisciplinary collaboration within the college community.

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IC department would like to extend appreciation to the students (Daxesh, Sanket, Rishabh, Maharshi, Sandeep) who diligently coordinated this event and to the organizing department for their invaluable support. Their dedication and hard work were instrumental in the success of the workshop