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## Vocational Training Program on PLC Programming

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Conducted Under RUSA Component 12: Vocationalisation of Higher Education

Venue: Indo German Tool Room (IGTR), GIDC Vatva, Ahmedabad

Organized by: Electrical Department, L. D. College of Engineering

Duration: 96 hours, 20/01/2025 TO 10/02/2025

Faculty Coordinators: Prof. Nupur Sinha

Prof. Rachana Patel

Prof. S. M. Patel

Prof. M. I .Siddiqui

### About the Training

The training program on 'PLC Programming' was organized under the Centrally Sponsored Scheme (C.S.S) RUSA 1.0. It was hosted at Indo German Tool Room (IGTR), GIDC Vatva, Ahmedabad, in collaboration with the Electrical Department of L.D. College of Engineering. The 96-hour course aimed at equipping students with theoretical knowledge and practical skills in industrial automation using PLCs.

### Learning Outcomes

Students gained a comprehensive understanding of PLC fundamentals, programming languages, hardware components, logic operations, timers, counters, and function blocks. They were introduced to Siemens software tools (Step 7 Micro/WIN and TIA Portal) and successfully completed various industrial automation assignments.

### Topics Delivered During the Training

- Day 1: Introduction to PLC Programming and Its Significance in Automation

- Day 2: Understanding Number Systems in PLC Programming
- Day 3: NO/NC Relays and Introduction to STEP 7 Micro/WIN & TIA Portal
- Day 4: Logic Gates Implementation - Assignment Based
- Day 5: Advanced Logical Operations - Assignment Based
- Day 6: Sequential Control and Memory Bits - Assignment Based
- Day 7: Function Blocks in STEP 7 & TIA Portal
- Day 8: Robotics and PLC Applications in Automation
- Day 9: Timers and Their Applications in PLC
- Day 10: PLC Exam and Practical Testing
- Day 11: Counters and Industrial Use Cases
- Day 12: Final Assignment Completion and Wrap-Up

### **Skill Development**

Through hands-on practice and assignments, students developed skills in:

- Ladder logic programming
- Fault diagnosis and troubleshooting
- Sequential process automation
- Industrial application design (traffic systems, conveyors, pumps, etc.)
- PLC integration with robotics and sensors

### **Student Feedback Highlights**

- Neeraj Chavda: Found the hands-on sessions very helpful and suggested extending the duration for more projects.
- Sahil Vadera: Appreciated the transformation from theoretical to practical learning with expert guidance.
- Rutvik Sosa: Gained confidence through direct interaction with real-world PLC systems.
- Rishi Barad: Valued the daily assignments and structured topic progression from basics to advanced concepts.

## Photos



Details of Student							
Sr.No	M/F	Full Name as per the Marksheet	Degree	Roll No.	Sem.	Mobile No.	Email ID
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## 7. Conclusion

The training provided a robust platform for electrical engineering students to dive into the domain of industrial automation using PLCs. The real-world assignments, simulation practices, and professional guidance ensured students gained both confidence and competence in PLC programming. This program has opened up pathways for automation-focused careers and has added significant value to the students' academic and professional growth.