Manufacturing Technology Training
An IMTMA initiative

# Hands-on training in PLC Programming and Networking
# Date : 25 to 27 February, 2026
# Venue : The AKGEC Skill Foundation, Ghaziabad

## INTRODUCTION

In today's industrial landscape, Programmable Logic controller (PLC) serve as the cornerstone of automation, enabling precise control over machinery and processes. PLC represents a key driver in automation, production & process planning in the manufacturing industry. Many industries of today, including packaging, pharmaceuticals, refineries, mines, machine shops, power plants and food industries use PLC systems for automation of their machinery to produce more, consistently, quickly and efficiently.

Modern PLC systems can be connected to data networks and interfaced with other automation control devices. However, for improvement / modification of the automation system, correct interpretation of the Logics and changes need to be made to the PLC program as and when required.

Keeping this in view, Indian Machine Tool Manufacturers' Association is organizing a 3-day **Hands-on training program in PLC Programming & Networking.** This training is designed to equip participants with practical skills in both PLC programming and networking, crucial for optimizing operational efficiency and troubleshooting in industrial settings.

## FOCUS AREAS

**This Program covers the important aspects of Electrical Engineering required for Non-Electrical Engineers to understand the domain.**

- Architecture of PLC.
- Setting up Communication with PLC Hardware.
- Concepts of Digital Electronics, Gates & Relays logics.
- Concepts of FB, OB & DB.
- Hands-on with Latching & Holding Circuit,
- Implement safety interlocks, Mathematical Functions.
- Industrial Networking: Device level & Control Level.
- Setting up communication between PLC (SIEMENS) and HMI via Profinet.
- Troubleshooting exercises on Simulated faults.
- HMI Screen Building.
- Hands-on Practice with HMI Design & Tagging.
- Role of Sensors in facilitating Industries Automation.
- Integration of PLC with I/P & O/P Devices. (Sensors, AC Drives).

## KEY TAKE AWAYS

**After undergoing the programme, the participants will be able to learn -**

- **Comprehensive Understanding of PLC Systems** Gain in-depth knowledge of PLC architecture, functions, and industrial relevance with hands-on exposure to Siemens, Mitsubishi, and Bosch systems.
- **Hands-on Experience in Ladder Logic Programming** Develop and test logic circuits using TIA Portal, including real-time applications like motor control, safety interlocks, and mathematical operations.
- **Proficiency in Industrial Communication Protocols** Understand and implement Profinet and Profibus networking, configure PLC-HMI communication, and perform basic troubleshooting in industrial networks.
- **Skill in HMI Design and Integration** Design functional HMI screens, tag elements, and link PLC data to interactive visual controls for user-friendly machine operation.
- **Field Device Interfacing Skills** Integrate and control industrial sensors and AC drives through PLCs, simulating real factory-floor automation setups.
- **Problem- Solving and Troubleshooting Abilities** Work on simulated faults and learn practical troubleshooting techniques for both hardware and network issues in automation environments.
- **Job- Ready Skills for Industrial Automation** Build a solid technical foundation for roles in automation engineering, industrial maintenance, and system integration.

## PARTICIPATION FEE

**Rs. 6999/-**
+18% GST
**IMTMA Members/ Micro Companies/ Individuals/ Educational Institutions / Students/ IMTMA Non Members/ Others**

**USD 280/-**
**Overseas Participants**

**Group Concession : 10% for 3 to 5 and 20% for 6 and more delegates being nominated from the same company**

## PARTICIPANT PROFILE

This programme will benefit Managers, Engineers & Middle management personnel involved in the functions of Design & Development, R&D, Production, Process planning, Application Engg. Maintenance and other related areas from Machine Tool, Auto & Auto Ancillaries, Packaging, Pharmaceuticals, Food Processing and other General Engineering industries.

Faculties from educational institutes can also participate in the programme. Students who are interested in Industrial Automation can participate to get a hands-on feel.

The programme will be totally practical oriented with hands-on practice. Participants would be encouraged to raise questions and solicit feedback from the expert faculty.

## FACULTY

This Program will be conducted by **Mr. Mahendra Dutt Dwivedi, Dr. Dinanath Prasad, and Dr. Alok Vardhan.**

**Mr. Mahendra Dutt Dwivedi,** Automation Trainer & Electrical Systems Specialist, AKGEC Skills Foundation (ASF). Mr. Mahendra Dutt Dwivedi is a dynamic professional and experienced trainer in the domain of Industrial Automation and Electrical Systems, with over 10 years of experience spanning industry operations, technical training, and applied project implementation. He holds a Bachelor's Degree in Electrical and Electronics Engineering from RGPV Bhopal and a Master's Degree in Renewable Energy Resources from IIT Roorkee.

**Dr. Dinanath Prasad,** Automation Engineer & Senior Trainer, AKGEC Skills Foundation (ASF). Dr. Dinanath Prasad is a highly qualified and certified professional in Industrial Automation with over 15 years of combined experience in teaching, industry training, and automation system deployment. He holds a Bachelor's degree in Electrical and Electronics Engineering from Technocrats Institute of Technology, Bhopal, a Master's degree in Advanced Power Systems from NIT Hamirpur, and earned his Ph.D. in Electrical Engineering from Delhi Technological University (DTU).

**Dr. Alok Vardhan,** Automation Engineer & Trainer, AKGEC Skills Foundation (ASF) Assistant Professor, Mechanical Engineering, AKGEC, Ghaziabad. Dr. Alok Vardhan is a dedicated automation professional and educator, with a strong foundation in fluid power systems, mechatronics, and industrial automation technologies. He holds a Ph.D. and M.Tech in Mechanical Engineering from IIT (ISM) Dhanbad, and a B.Tech from UPTU, Lucknow. With over 7 years of experience spanning academia, industry, and automation training, Dr. Vardhan brings a hands-on, application-driven approach to skill development in emerging industrial technologies.


## For Registration Contact

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**REGISTRATION :** Prior registration for participation is necessary. Number of participants is limited and will be accepted on 'First Come First Serve' basis. A Certificate of participation will be issued to participants.
**Important Information :** Participation fee includes, course material, working lunch and tea / coffee. Interested companies are requested to register online by clicking on 'REGISTER' button and by filling up the nomination authority and participant's details in specified form.