GTC Transforming Emerging Economies
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Industrial Automation & PLC Systems

COURSE OVERVIEW

This course provides a practical and industry-focused introduction to modern automation systems and Programmable Logic Controllers (PLCs), equipping participants with the skills to design, program, and troubleshoot automated industrial processes. It covers the fundamentals of control systems, sensors, actuators, ladder logic, human–machine interfaces (HMIs), and communication networks used in manufacturing and industrial environments. Through hands-on exercises and real-world case applications, participants will learn how to build reliable automation solutions that improve efficiency, safety, and operational performance across a wide range of engineering and production systems.

WHO SHOULD ATTEND?

This course is ideal for electrical engineers, power systems engineers, instrumentation and control engineers, maintenance and operations personnel, energy managers, plant technicians, technical supervisors, and engineering project managers. It is also suitable for professionals transitioning into electrical engineering roles, as well as those involved in the design, operation, safety, or optimization of electrical systems in industrial, commercial, or utility environments.

COURSE OUTCOMES

Delegates will gain the skills and knowledge to:

- Design and program PLC systems using ladder logic and function block diagrams.
- Configure and integrate industrial sensors and actuators.
- Develop human-machine interface applications for process monitoring.
- Implement industrial communication networks and protocols.
- Troubleshoot and maintain automation control systems.
- Design motor control circuits and variable frequency drive systems.

KEY COURSE HIGHLIGHTS

At the end of the course, you will understand;

- PLC hardware architecture and selection criteria.
- Ladder logic programming and advanced instruction sets.
- Industrial sensor technologies and signal conditioning.
- Motor control principles and drive systems.
- Industrial networking protocols and fieldbus systems.
- HMI development and SCADA system integration.
- Safety systems and emergency shutdown procedures.

All our courses are dual-certificate courses. At the end of the training, the delegates will receive two certificates.
1. A GTC end-of-course certificate
2. Continuing Professional Development (CPD) Certificate of completion with earned credits awarded