

Mechatronics & Automation in Manufacturing

COURSE OVERVIEW

This course provides comprehensive training in the principles and applications of mechatronics and automation within modern manufacturing systems. It also addresses maintenance strategies, troubleshooting methods, and safety requirements for automated production lines, enabling professionals to support reliable and high-performance manufacturing operations. The curriculum covers the integration of mechanical components, electronics, control systems, sensors, actuators, and industrial automation technologies essential for efficient production environments. Participants will learn how automated systems are designed, programmed, and optimized, with emphasis on robotics, PLCs, industrial communication networks, process control, and smart manufacturing concepts.

WHO SHOULD ATTEND?

This course is designed for mechanical, electrical, and mechatronics engineers, automation specialists, manufacturing engineers, maintenance personnel, and production supervisors. It also benefits robotics technicians, plant operators, project engineers, and technical professionals involved in the design, operation, troubleshooting, or optimization of automated manufacturing systems.

COURSE OUTCOMES

Delegates will gain the skills and knowledge to:

- Integrate mechanical, electrical, and control components in automated manufacturing systems.
- Program and troubleshoot PLCs, robotic systems, and industrial control devices.
- Apply sensor technologies, actuators, and feedback systems for precise automation control.
- Analyze and optimize production processes using automation and mechatronic principles.
- Implement preventive and predictive maintenance strategies for automated equipment.
- Apply industrial communication protocols for machine-to-machine and system integration.

KEY COURSE HIGHLIGHTS

At the end of the course, you will understand;

- Mechatronics principles and their role in modern manufacturing.
- PLC programming, robotics control, and industrial automation systems.
- Sensor selection, signal conditioning, and actuator applications.
- Control logic, feedback systems, and process automation strategies.
- Maintenance methods for automated and robotic equipment.
- Industrial communication networks and system integration techniques.
- Smart manufacturing concepts, digitalization, and Industry 4.0 technologies.

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