MeTec
EMPWER YOUR TECHNICAL SKILLS

PROCESS CONTROL & INSTRUMENTATION

OUR ACCREDITATION & PARTNERS

PROCESS CONTROL & INSTRUMENTATION

OVERALL DESCRIPTION:

In an era where every operational nuance can impact the bottom line, the ability to precisely control and monitor industrial processes is not just a technical skill—it is a strategic asset. This course provides a comprehensive and practical deep dive into the world of Process Control & Instrumentation (PC&I), empowering your team to transform theoretical knowledge into tangible operational improvements. We will move beyond the blueprints to equip your professionals with the expertise needed to manage complex systems, proactively mitigate risks, and drive measurable gains in efficiency, product quality, and safety. This program is an investment in your team's capability to innovate and lead in a competitive market.

Course Objectives:

Upon completion of this course, participants will have the knowledge and skills to:

- Identify and define key process variables and their measurement principles.
- Comprehend and interpret Process and Instrumentation Diagrams (P&IDs) with confidence.
- Apply hands-on knowledge to calibrate and maintain a range of industrial instruments.
- Analyze and tune a variety of control loops to improve process stability and efficiency.
- Develop systematic troubleshooting strategies for common PC&I faults.
- Understand and implement best practices for Safety Instrumented Systems (SIS).

Course Outline:

- **Foundational Principles:** An in-depth look at process variables (flow, level, temperature, pressure) and their significance.
- **Instrumentation and Measurement:** Exploring the technology behind industrial sensors, transmitters, and final control elements.

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Course Outline:

- **Control Loop Fundamentals:** Delving into the components and mechanics of feedback and feedforward control loops.
- **Reading and Using P&IDs:** A practical, diagram-focused module on decoding the language of process control.
- **Controller Tuning and Optimization:** Hands-on practice with popular tuning methods (e.g., PID) and advanced control strategies.
- **Troubleshooting and Maintenance:** A systematic approach to diagnosing and resolving instrument and control system failures.
- **Industrial Safety and Standards:** An overview of critical safety systems, including SIS, alarms, and industry standards.

WHO SHOULD ATTEND?

This course is ideal for a wide range of professionals seeking to enhance their technical expertise, including:

· Process, Mechanical, and Electrical Engineers
· Plant Operators and Technicians
· Maintenance Supervisors and Staff
· Control System Designers and Integrators
· Anyone involved in the design, operation, or maintenance of industrial processes.

Course Methodology:

We utilize a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. This training course will be conducted as a highly interactive workshop session. A variety of training methodologies will be used Before and during the course whenever applicable. Some of these methods are gamification, online pre-post test, role plays, self-assessment instruments, group exercises & case studies.