

Process Control and Instrumentation Masterclass

This course has been designed with these recent trends in mind while covering knowledge base and level of confidence in the area of Sensor Technologies and Process Control Engineering. Topics of importance to field Engineers and Operators such as Maintenance and Troubleshooting are covered. Finally, the state of the art advanced process controllers and latest trends are also covered.

13th – 15th September 2022

Kuala Lumpur (In Person) / Online Training

Major Benefits of Attending

By the end of this course, delegates will be able to: -

- **Understand** the principles of operation of a range of sensors and transducers
- By using a hands-on approach, **Investigate** the operation of an instrumentation system through designing, building and testing typical sensor combined with appropriate signal conditioning circuits
- **Master** a range of measurement techniques
- **Grasp** the concepts of Process Control and **Acquire** the knowledge relating to the characteristics and properties of a process variable being measured
- **Develop** the ability to 'tune' a process control system using PID control
- **Apply** the above techniques and principles to solve an unfamiliar and bespoke measurement situation in the workplace
- **Specify** and **Design** instrumentation systems for pressure, level, temperature and flow
- **Identify** a large number of industrial analytical measuring instruments
- **Describe** the construction and operation of the most important analytical instruments
- **Conduct** the following types of measurement; pH, conductivity, turbidity, hygrometry, dissolved oxygen, total free chlorine and on-line chromatography
- **Implement** procedures for testing and calibration of analytical instruments
- Correctly **Select** and **Size** control valves for any particular application
- **Troubleshoot** and **Identify** problems with instrumentation systems
- **Isolate** control loops and **Identify** a faulty instrument

Course Methodology

Client has the option to choose to participate either below method.

Online Training : *This course will be conducted via Zoom.*

Marriot Group Hotel: *This course will be conducted at the hotel with the trainer on site. Participants will need to bring their own laptop. Lunch/Dinner and 2 networking breaks will also be provided.*

Why you Should Attend?

The control of processes in today's oil, gas and chemicals industries requires accurate knowledge of process conditions and this in turn means accurate measurement of those conditions. Without measurement, there can be no control and no information as to the state of the process.

A greater understanding of the measuring equipment and the instruments can improve the performance of the operator and this in turn will improve plant performance. Better knowledge of how equipment is selected and how it is constructed and how it works helps an operator to identify the cause of problems and prevent their recurrence. Hence, the economic benefits of properly trained and informed operators can be readily quantified

Topics covered include:

- Introduction to the principles and fundamentals of Process Measurement and Instrumentation systems and Process variables. Symbols and units used and sample calculations
- Principles of operation of Sensors and Transducers used for:
 - o Temperature Measurement
 - o Strain measurement
 - o Pressure measurement
 - o Flow measurement
 - o Level measurement
- Ultrasonic techniques for non-invasive process measurement
- Principles of Process Control and study of the main Control strategies used, leading to an explanation of the 3-term PID controller
- Explanation of a method used to 'tune' a 3-term PID controller

Who Should Attend?

This workshop is suitable for and is designed to attract and be of benefit to a range of people who work in the instrumentation and process plant area. Typically but not exclusively this course will be of benefit to:

- Electronic Engineers and Technicians
- Chemical Engineers and Technicians
- Electrical Engineers and Technicians
- Electronic Design Engineers
- Instrumentation Technicians
- Electricians
- Installation and Maintenance Technicians
- Instrument and Process Control Technicians
- Instrument Fitters
- Maintenance Engineers
- Mechanical Engineers and Technicians
- Operations Engineers
- Process Technicians
- Production Professionals
- System Integrators
- Other professions (Engineers, Technicians) involved in the Process Industry who require an appreciation and understanding of the techniques used in Process Measurement and Control.

Organized by:



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