



IE203: Control Valves Engineering



Training Description:

This intensive training course focuses on specifying the right control valve, actuator and accessories to operate through the full range of process conditions. This course covers general applications and emphasizes the sizing and selection methods for a broad variety of control valves and actuators. Select the proper valve characteristic for a given process.

The training course reviews design and operating principles of control valves, actuators, positioners and related accessories. It describes the sizing and selection methods for a broad variety of control valve assemblies. Participants will solve several problems using Fisher Specification Manager and published materials, plus participate in group exercises.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Select the proper valve characteristic for a given process
- ✓ Choose suitable styles of control valves for an application
- ✓ Size of control valves and actuators
- ✓ Properly apply positioners and instruments
- ✓ Select and size of control valves to reduce aerodynamic noise
- ✓ Select and size control valves for cavitating applications
- ✓ Select valve types and options for corrosive and erosive fluids
- ✓ Select size of control valves for two-phase flow and hydrocarbon mixtures

Training Designed for:

This course is intended for engineers, technicians and managers for sizing and selecting control valves, actuators and control valve instrumentation.

Prerequisites:

Some experience with industrial controls equipment including control valves and actuators would be helpful.

Training Program:

DAY ONE:

- ❖ Pre-Test
- ❖ Introduction
- ❖ Control Loop Components
- ❖ Typical Process Control Application: Three-phase Separator
- ❖ Standards and Symbols
- ❖ Control Valve Selection: Rotary / Sliding Stem
- ❖ Recap

DAY TWO:

- ❖ Actuator Selection and Sizing
- ❖ Corrosion Resistant Valves
- ❖ Liquid Valve Sizing



- ❖ Gas Valve Sizing
- ❖ Positioners and Transducers
- ❖ Recap

DAY THREE:

- ❖ Valve Application Guidelines
- ❖ Valve Characteristics
- ❖ Valve Packing Considerations
- ❖ Cavitation
- ❖ Recap

DAY FOUR:

- ❖ Valve Noise
- ❖ Aerodynamic Noise/ Whisper Trim
- ❖ Noise Sources, Cavitation Sources and Treatment
- ❖ Packing Types and Application Positioners Types and Application, I/P Converter
- ❖ Special Accessories (booster, SOV, trip valves...)
- ❖ Cavitation Issues and Solutions
- ❖ Recap

DAY FIVE:

- ❖ Steam Conditioning Valves
- ❖ High Pressure/Temperature Issues
- ❖ Sizing for Two Phase Flow, Fluid Mixtures Corrosive/Erosive Service
- ❖ Actuators: Stroking Speed, Hysteresis, and Other Control Application Guidelines
- ❖ Course Conclusion
- ❖ Post-Test and Evaluation

Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

This training course is available upon request in English or Arabic. Content, location and duration can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test





Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Team Training Discount—If you're registering with a company colleague (or two or more) at the same time, you can save an additional 20%. (The 20% discount applies only to two or more participants taking the same course and does not apply to two participants taking separate courses.)

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department

