



CONTROL VALVES, ACTUATORS AND POSITIONERS



COURSE OVERVIEW

Control valves are an increasingly vital component of modern manufacturing around the world. Properly selected and maintained control valves increase efficiency, safety, profitability, and ecology.

A large number of control valves are used all over the world and some of them have not been correctly sized or maintained. This course covers fundamentals of Control Valve including control valve types, control valve components, control valve accessories and control valve applications employed in a number of common control applications in systems related to the oil and gas industry. Also, this course covers control valve sizing, valve characteristics and control valve engineering as well as valve calibration, maintenance and troubleshooting.

DATES, VENUES AND FEES



20 – 24 July 2025 - Dubai

(5 Days)

Fees

US\$ 4500

Note: Fee is per participant + 5% VAT (if applicable).

Groups from the same company can enjoy a **discounted** price.

WHO SHOULD ATTEND?

This course is appropriate for a wide range of professionals but not limited to:

- Control valve specialists
- Electrical engineers/technicians
- Maintenance engineers/technicians
- Process engineers/technicians
- Instrumentation engineers/technicians
- All technical staff involved in selection, sizing, operation and maintenance of control valves and actuators

CONTACT US NOW

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ACCREDITATION



This training course is certified by CPD.

The CPD Certification Service is the leading independent CPD accreditation institution operating across industry sectors to complement the Continuing Professional Development policies of professional institutes and academic bodies. The CPD Certification Service provides support, advice, and recognised independent CPD accreditation compatible with global CPD principles. CPD is the term used to describe the learning activities professionals engage in to develop and enhance their abilities and keep skills and knowledge up to date. CPD Units are only awarded to programmes after each programme is scrutinised to ensure integrity and quality according to CPD standards and benchmarks.

COURSE CERTIFICATE

MSTC certificate will be issued to all attendees completing a minimum of 80% of the total tuition hours of the course.

CPD internationally recognized certificate will be issued for all participants who will meet the course requirements. CPD certificates will be issued within a month of the successful completion of the course.

TRAINING METHODOLOGY

- Expert-led sessions with dynamic visual aids
- Comprehensive course manual to support practical application and reinforcement
- Interactive discussions addressing participants' real-world projects and challenges
- Insightful real-world case studies and proven best practices to enhance learning

LEARNING OBJECTIVES

- To give an understanding of the principles and practice of the following elements:
 - Control Valve Overview
 - Types of Control Valves & Actuators
 - Sizing & Selection of Control Valves
 - Valve Characteristics
 - Valve Positioner (Conventional and Smart) Overview
 - Valve Calibration, Maintenance and Troubleshooting
- To allow the participant to become familiar and confident with a range of control valve types
- To understand the concepts of Process Control and acquire the knowledge related to the characteristics and properties of a control valve
- To disseminate and share experience and knowledge with other delegates through open session discussions hence broadening the knowledge base of all
- To have the confidence and knowledge to apply the above techniques and principles to be used in valve maintenance and troubleshooting

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COURSE OUTLINE

DAY 1

Course Pre-Test

Introduction

- Process Control Loops
- Fluid Flow Profiles
- Bernoulli's equation
- Flow Through a Restriction

Control Valve Types

- Sliding Stem
- Rotary Types

Installations & End Connection Types

DAY 2

Control Valve Components

- Valve Plug Types
- Trim Materials
- Bonnets & Packing
- Valve Body

Valve Actuators

- Actuator Types
- Actuator Selection
- Valve Actuator Sizing Calculations

Valve Positioner

- Positioner Types & Components
- Direct & Reverse Action Positioner
- Characterized Cams

DAY 3

Control Valve Sizing

- Control Valve Sizing
- Sizing for Liquid
- Sizing for Compressible Fluid & Gases
- Valve Sizing Coefficient
- Valve Sizing Exercises

Control Valve Applications & Problems

- Over/under sizing
- Control Valve Cavitation & Flashing
- Control Valve Noise
- Special Control Valves

Control Valve Fail Safe

- Fail open
- Fail Close
- Remain in Position

DAY 4

Control Valve Characteristic

- Inherent Flow Characteristic
- Installed Flow Characteristic
- Characterized Cages
- Characterized Cams

Selection of Flow Characteristics

- Liquid Level Systems
- Flow systems
- Severe Service Applications

Control Valve Process Data

- Control Valve Material Selection
- Control Valve Data Sheets

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COURSE OUTLINE

DAY 5

Control Valve accessories

- Solenoid Valves
- Limit Switches
- Positioner Transmitter

Control Valve and Fieldbus

- Foundation Fieldbus
- Control Valve and Fieldbus

Control Valve Installation, Commissioning and Troubleshooting

- Control Valve Installation
- Control Valve Calibration & Commissioning
- Control Valve Maintenance & Troubleshooting
- Consumable Spare Parts

Post-Test

Certification

Course Evaluations

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