



# 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

+971 (4) 4539841 – 42 – 43  
WhatsApp: +971 52 398 7781

Millennium Solutions Training Center FZ-LLC  
Block 2B, 1st Floor, Office 134, Knowledge Park, Dubai, UAE

Email: [info@mstcme.com](mailto:info@mstcme.com)

Website: [www.mstcme.com](http://www.mstcme.com)





## 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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