



## Sizing, Selecting, and Applying Process Control Valves Training

### Description

#### Course Description

Extensive course materials provided contained useful information about valves/sizing and selection both theoretical and practical. You will gain a practical understanding of control valves, actuators, and positioner designs and their applications. The course also provides methods that can be used to identify specific valve problems and arrive at acceptable solutions within engineering tolerance

#### Course Objective

- Compare various types of final control elements
- Understand a typical valve operation in a control loop
- Differentiate between various types of valves and the benefits of each
- Compare rising stem to rotary style valves
- Analyze a control system to determine control valve needs
- Use ISA standards for control valve specification and selection
- Size valves for any flow condition likely to be found in a process plant
- Evaluate and select actuators for specific applications
- Specify appropriate auxiliaries including positioners and I/P transducers
- Design control valve installations that are safe and trouble-free

#### Course Outlines

##### Introduction:

- Valve in Loop,
- Actuator,
- Positioner

##### Basic Valve Types:

- Globe Valves,

- Ball Valves,
- Plug Valves,
- Butterfly Valves

#### **Actuators:**

- Spring/Diaphragm,
- Piston,
- Vane,
- Scotch-Yoke,
- R & P

#### **Comparison:**

- Rising Stem,
- Rotary Stem,
- Accessories,
- Positioner,
- I/P Converters

#### **Valve Performance:**

- Gain,
- Time,
- Trim,
- Special Needs

#### **Flashing/Cavitation & Noise:**

- Cause/Effect,
- Prevention,
- OSHA,
- Source and Abatement

#### **Installation:**

- Performance, Safety and Others

#### **Valve Sizing:**

- Valve sizing calculation Manual,
- Valve Sizing calculation Computer

#### **Specification and Selection:**

- Process Requirements,
- Other Considerations

### **Maintenance and Troubleshooting Considerations:**

- Special Requirements,
- Diagnostic Tools

### **Smart Valves:**

- Available Designs,
- Applications in Industry

[www.acculearn.co.uk](http://www.acculearn.co.uk)