



**ASSETS PROTECTION COMPANY**  
**SECURITY AND SAFETY TRAINING CENTER**  
**(A DIVISION OF SAUDI PETRO GAS CO.)**

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**Instrumentation**

**Objectives:**

The objective of this course is to provide, enhance and promote safe technical knowledge and practices concerning actual day-to-day tasks of the trainees, wherein after the completion of the program, the participant will be able to:

- Understand the basic principle of Instrumentation like P&I diagrams, Standards & Symbols used therein.
  - Understand the underlying principles of Temperature, Pressure, Level, Flow & thickness measurements and undertake to carry out measurement of their own
  - Understand the concepts of DCS and DDC
  - Understand the concepts of Analyzers, Controllers, Actuators, Converters, Positioners, etc.
  - Understand the various types of Control Valves and undertake Valve selection and sizing
  - Find out the latest developments in the field of Instrumentation like Smart Transmitters, Field Bus concepts, etc.
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**Course Subjects:**

- Basic Principles of Instrumentation
  - Temperature Measurement
  - Pressure Measurement
  - Flow Measurement
  - Level Measurement
  - Analyzers
  - Controllers and Distributed Control System (DCS)
  - Distributed Digital Control (DDC) System Concept
  - Control Valve
  - Actuators
  - Valve Positioners
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**Participants:**

- Technical Staff, Maintenance and Production Supervisors

**Methodologies:**

- Pre-Training Assessment
- Class Room sessions
- Plant / Work visits
- Evaluation – Written & Practical Test, Oral / Viva-Voce Test

**Duration:**

- Evaluated based on Trainees' Profile / Client Needs
- Eight (8) to twelve (12) Weeks in general at 5 days of 8 hours .

**Course Location:**

- Security and Safety Training Center, Dhahran or at Client's Suitable Venue

**Language:**

- English / Arabic