

Course Name: Basic Instrumentation and Control

Code:

DATE:

Course Objective:

This course will cover areas pertaining to the instrumentation, basic concept of control system and components (sensors, input/output elements, controllers, final control elements) of surface facilities. Specific instrumentation and controls for pressure, temperature, flow, level, density, control valve, and field data acquis...

Who Should attend?

Process engineers, mechanical engineers, electrical engineers, instrumentation and control engineers, and surface facilities project engineers.

Course Outline:

Day 1

Measurement, Instrumentation, and Controls

- Standard instrument symbols and abbreviations
- Process control basics
- Measurements of process variables

On the first day, participants will undergo introduction to standards, abbreviation and symbols used in the oil and gas industry, The day continues with the process control basic and the components of the control system. The day ends with discussions on main process variables measured to control the processes.

Day 2

Pressure Control System and Control Valves

- Pressure control devices

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- Sensors and transmitters
- Controllers and control valves

Day two will concentrate on the technologies and component of the pressure control system, sensors, transmitters, and controllers. The day ends with a discussion over actuated valve engineering, interpretation of the control valve function, sizing the valve, and the selection of the valve.

Day 3

Level and Temperature Control Systems

- Measurement instruments
- Classifications
- Range of operations

Day three will have two main focuses. The first will be the elements of the temperature measurement and control system, technologies, principles of measurement and range operation. The second will be level measurement and control system which includes the classification, principles, and range of operation of it as well.

Day 4

Flow Rate Control System: Gas and Liquid

- Liquid flow rate metering and control system
- Gas flow rate metering and control system

The fourth day starts with the main elements of measurement and control system of the liquid flow rate. Emphasis is provided on the flow metering technologies, principles of measurement and range operation. The day ends with the description and use of the gas flow rate metering system and control, as in the liquid flow rate part, emphasis will be on flow metering technologies, principles of measurement and range operation.

Day 5

PLC, DCS, and SCADA

- Local control systems
- DCS
- SCADA

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On the last day, participants will learn will be introduced the concept of PLC, DCS, and SCADA. Architecture, main functions, control system, data acquisition and communication system will also be covered.

Course Duration: (5) Day

Venue:

Time: Numbers of hours: Hours

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