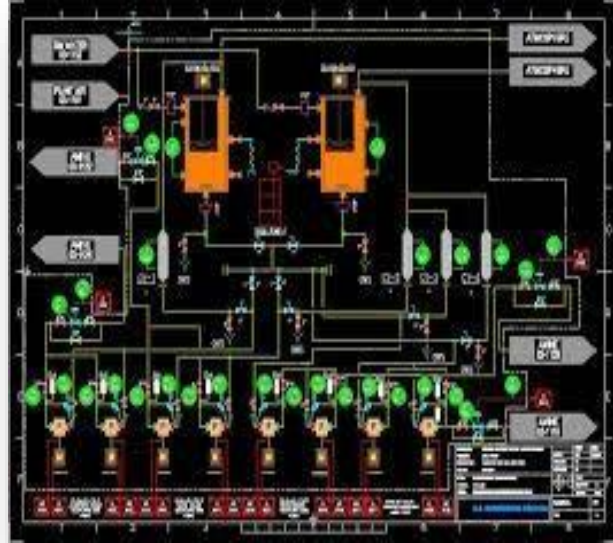




ICE203

Instrumentation Diagrams and Symbols Application

Course Introduction:

This course presents the methodology for developing and applying instrument and control drawings and the ISA Standards available to assist in this effort. You will develop actual documents for a simple project to aid your understanding.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- ✓ Define instrument and control systems, including: Process Flow Diagrams, Piping and Instrumentation Drawings (P&IDs), Instrument Lists, Specification Forms, Logic Diagrams, Location Plans, Installation Details, Loop Diagrams
- ✓ Explain the type of information included on each document
- ✓ Identify the sequence of document development for a typical project
- ✓ Identify some process control devices and the symbols used to define them
- ✓ Identify the ISA Standards available to assist you in developing and understanding instrument and control documents

Who Should Attend?

This course provides an overview for all significant aspects and considerations of Instrumentation Diagrams and Symbols Application for process control engineers and supervisors, instrumentation and control system engineers, automation engineers, instrumentation engineers and technologists.

Course Outline:

Day 1:

Introduction

Symbols

- General Instrument or Function Symbols
- Instrument Line Symbols
- Function Blocks-Function Designations

ISA Standard Identification Letters

- Typical Letter Combinations
- Field or Local Instruments
- More Primary Element Symbols
- Typical Transmitters-Flow
- Orifice Plates
- Typical Transmitters-Leve
- Transmitters-Pressure and Temperature

Day 2:

Typical Controllers:

- Field Locations
- Control Board Locations
- Distributed Control System (DCS)
- Computer
- Programmable Logic Controller (PLC)

Control Valve Types

- Actuator Action and Power Failure

Day 3:

Process Flow Diagram

- Process Description
- P&IDs and ISA Standards
- Typical P&ID

Climatization

- Instrument Numbering

Day 4:

Instrument List

- Specification Forms
- An ISA20 Specification Form

Logic Diagram

- Binary Logic Diagrams for Process Operations
- Motor Start Logic

Instrument Installation

- Installation Detail

Day 5:

Loop Diagram

- Types and Uses

Control Schemes

- Feedback Loop
- Radio Control
- Cascade Control

Split Range

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course location. This rate includes participant's manual, and-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session