SCANDINAVIAN ACADEMY
For Training and Development

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Course: Instrumentation Diagrams & Symbols Application

Code	City	Hotel	Start	End	Price	Language - Hours
549	DUBAI (UAE)	Hotel Meeting Room	2024-12-09	2024-12-13	3950 €	En - 25

About The Course

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 Completion of the Course, Participants will be able to:

- You will become familiar with the documents used to define instrument and control systems, including: Process Flow Diagrams, Piping & Instrumentation Drawings, Instrument Lists, Specification Forms, Logic Diagrams, Location Plans, Installation Details, Loop Diagrams
- You will understand the type of information included on each document
- You will become familiar with the sequence of document development for a typical project
- You will cover the definition and use of: Process Flow Diagrams, P&IDs, Instrument Lists, Specification Forms, Logic Diagrams, Location Plans, Installation Details, Loop Diagrams
- You will cover an overview of some process control devices and the symbols used to define them
- You will become aware of the ISA Standards available to assist you in developing and understanding instrument and control documents

Designed For

- Process Control Engineers & Technicians
- Automation Engineers
- DCS Engineer
- Operations Managers
- Operators & Control Room Personnel
- Metallurgists
- Production Engineers
- Process Engineers
- Plant Engineers
- Electrical Engineers
- Electrical & Instrumentation Technicians
- Maintenance Engineers & Supervisors
- All those who want to be updated on the latest developments in SCADA and PLC systems and want to get a solid appreciation of the fundamentals of their design, installation and troubleshooting.

Training Methodology

The Course will be highly participative and will include a wide range of methods including presentations, discussions, videos, case studies and exercises. Where appropriate, these will include real issues brought to the Course by delegates.

- Case studies from different industries will be investigated. Each delegate will receive an extensive reference manual, as well as case studies, while worked out solutions will be handed out to the delegates on conclusion of group discussions.
- To ensure the concepts introduced during the course are understood, they will be reinforced through a mix of learning methods, including lecture style presentation, open discussion, case studies, simulations and group work.

Course Outline

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 – Level
- Transmitters – Pressure and Temperature

Typical Controllers:

- Field Locations
- Control Board Locations
- DCS | Computer
- PLC

Control Valve Types:

- Actuator Action and Power Failure

Process Flow Diagram:

- Process Description

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

Climatization:

- Instrument Numbering

Instrument List:

- Specification Forms
- An ISA20 Specification Form

Logic Diagram:

- Binary Logic Diagrams for Process Operations
- Motor Start Logic

Instrument Installation:

- Installation Detail

Loop Diagram:

- Types and Uses

Control Schemes:

- Feedback Loop
- Radio Control
- Cascade Control

The Scandinavian Academy for Training and Development employs modern methods in training and skills development, enhancing the efficiency of human resource development. We follow these practices:

- **Theoretical Lectures:**
  - We deliver knowledge through advanced presentations such as PowerPoint and visual materials, including videos and short films.
- **Scientific Assessment:**
  - We evaluate trainees skills before and after the course to ensure their progress.
- **Brainstorming and Interaction:**
  - We encourage active participation through brainstorming sessions and applying concepts through role play.
- **Practical Cases:**
  - We provide practical cases that align with the scientific content and the participants specific needs.
- **Examinations:**
  - Tests are conducted at the end of the program to assess knowledge retention.
- **Educational Materials:**
  - We provide both printed and digital scientific and practical materials to participants.
- **Attendance and Final Result Reports:**
  - We prepare detailed attendance reports for participants and offer a comprehensive program evaluation.
- **Professionals and Experts:**
  - The programs scientific content is prepared by the best professors and trainers in various fields.
- **Professional Completion Certificate:**
  - Participants receive a professional completion certificate issued by the Scandinavian Academy for Training and Development in the Kingdom of Sweden, with the option for international authentication.
- **Program Timings:**
  - Training programs are held from 10:00 AM to 2:00 PM and include coffee break sessions during lectures.