

TRAINING COURSES BROCHURE

2017

Instrumentation Design & Detailed Engineering

PROGRAM OUTLINE

IDE 101. Introduction to Oil & Gas Industry and EPC Contracts.

IDE 102. Fundamentals of Process Instrumentation

IDE 103. Control Valve Essentials and Capabilities

IDE 104. Process Control

IDE 105. Fundamentals of ESD, F & G & BPCS

IDE 106. Calibration, Installation and Maintenance of Instruments

IDE 107 . Instrumentation Standards in Oil & Gas, E & I, Drawings and Documentation

IDE 108 . Instrumentation Drawing, Documentation & Schematics

JAS-ANZ



ISO 9001:2008
CERTIFIED

ISO 9001:2008 Certified for Engineering Procurement & Construction Training Company

SmartBrains Training Program

SmartBrains is the global market leader in providing high-level training services to the energy sector (Oil and Gas, Petrochemical, Refinery, LNG, Power Plants, Fiscal, Contracts, Strategy & Finance and Leadership & Management). Operating nation wise over the last 8 years, our courses are widely acknowledged within the energy community for quality and up-to-date information. Our success and distinguished reputation is down to our commitment to the industry, a high-level of expertise, sector knowledge, cultural diversity and experience that comes from organising

SmartBrains Affiliation & Accreditation



SmartBrains engineers and technologist Pvt. Ltd. has received recognition, endorsement and affiliation from National Skill Development Corporation of India (NSDC), a Public Private Partnership (PPP), Under the Ministry of Skill Development and Entrepreneurship (Govt. of India Enterprises) & various Skill Sector Councils as an authorized training partner under various trades. SmartBrains is authorized to provide skill based training for engineering/non-engineering candidates as per their interest. SmartBrains as a training institute will provide complete practical knowledge based skill training to the candidates and NSDC/Skill Councils will be responsible for providing

Why SmartBrains

- **Highly qualified and experienced trainers**
 - ✓ Our team consists of highly qualified and experienced trainers with years of teaching, as well as hands-on and in-depth expertise in EPC industries
- **Technical Insight & Case Study**
 - ✓ Our courses combine technical knowledge and experience to make learning accessible and entertaining.
- **Convenient Place & High Quality Training Material**
 - ✓ Classroom & Training Material are excellent designed to create a positive learning environment
- **Training on latest designing and drafting softwares**
 - ✓ Our Courses combine latest engineering designing softwares, 3d modeling tools and 2D drafting softwares as well.
- **Online classes are available through VC**
 - ✓ You can attend our live training classes from your home or at your convenient place by Video conference



2017 TRAINING SCHEDULE

Training Courses	Course Duration	Course Fee	Dates
IDE 101- Introduction to Oil & Gas Industry and EPC Contracts	6 Hours	INR 1000/-	3rd June
IDE 102- Fundamentals of Process Instrumentation.	6 Hours	INR 3000/-	4th 5th June
IDE 103- Control Valve Essentials and Capabilities	6 Hours	INR 3000/-	6th June
IDE 104- Process Control	6 Hours	INR 3000/-	7th June
IDE 105- Fundamentals of ESD, F & G & BPCS	6 Hours	INR 4000/-	7th June
IDE 106- Calibration, Installation and Maintenance of Instruments	6 Hours	INR 4000/-	8th June
IDE 107- Instrumentation Standards in Oil & Gas, E & I, Drawings and Documentation	6 Hours	INR 4000/-	9th June
IDE 108- Instrumentation Drawing, Documentation & Schematics	6 Hours	INR 10000/-	10th 11th June

Terms and Conditions :



1. All the Public Training will be held in SmartBrains Training Centers
2. Course fee excluding Tax.
3. Course fee including :
 - Tea Break
 - Training Kit (Pen, Note. etc)
 - A full set of the course Module
 - CD containing complete course slide
 - Certificate of Completion
4. SmartBrains reserves the right to cancel classes up to one week before scheduled date due to low registration.
5. Upon cancellation, SmartBrains will provide registrants a full refund for pre-paid course fees. Cancellation of courses does not imply responsibility for reimbursement to registrants for non refundable expenses

• Please Note That We Offer :

- ✓ Upto 15% Fee Discounts on all Modules Training
- ✓ Upto 10% Fee Discounts on Early Bid
- ✓ Upto 15% Fee Discounts on Group Registration

The all modules training discount will be apply only to participants who are registering for all 9 Modules

The early bird will apply only to sign up 7 days before the course commencing date.

The Group Registration Discount will apply on a group of minimum 3 participants

COURSE OUTLINE

General Industry overview and basic concepts

Oil & Gas prospecting (Exploration)

Geological prospecting

Geophysical prospecting

Seismic (2D and 3D) acquisition

Oil & Gas Production Facilities

Overview of an EPC Contract

Tender and Procurement Process

The Scope of Works

June
2017

3
Saturday

COURSE OUTLINE

Fundamentals of Process Instrumentation

Process Instrumentation

- Process Measurements Concepts

- Pressure Level

- Temperature and Flow Overview

- Pneumatic and Hydraulic

Instrumentation Systems

Pressure Measurement

- Pressure Measurement Concepts

- Pressure Measurement Devices

- Pressure Transducers and load cells

- Transmitters, Gauges, Indicators, Switches, Elements and Accessories.

- Installation Considerations and Impact on the Overall Control Loop.

June
2017

4
Sunday

COURSE OUTLINE

Level Measurement

- Level Measurement Techniques

- Different level measurement devices And Accessories

Temperature Measurement

- Temperature Measurement Techniques

- Different Temperature Measurement Devices and Accessories Protections

Flow Measurement

- Flow Measurement Techniques

- Different Flow Measurement Devices and Accessories

June
2017

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Monday

COURSE OUTLINE

Control Valve Essentials and Capabilities

Different Types of Control Valves and Their Characteristics

Sizing of Control Valves, Actuation and Essential Accessories

Use of Computer Programs for Valve Sizing

Actuators, Positioners and Pneumatic Circuits

Control Valve Material, Standards, Applications, Maintenance and Installation

Types of Materials and Quality Standards for Different type of Valves

June
2017

6
Tuesday

June
2017

7

Wednesday

COURSE OUTLINE

Process Control Basics

- Reasons for Process Control
- Stability, Algorithms and Cascade Control
- Action, Feed forward and the Effects of Dead Time

Emergency Shutdown Logics (ESD)

Fire & Gas (F & G)

Basic Process Control System (BPCS)

Hazardous Areas

- Classification of Hazardous Areas
- Different Standards

June
2017

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Thursday

COURSE OUTLINE

Instrument Maintenance and Testing

- Different Standards, Certifications, Marking and Approvals
- Calibration of instruments
- Instrument Performance
- Simulation
- Configuration, Rearrangement and Digital Timing of Digital Transmitters

Maintenance Concepts

Electrical Concepts

- Use of Multimeters and calibrators
- Voltage, Current and Resistance Measurement
- Open and Short Circuits
- Isolation and Grounding/Earthing

June
2017

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Friday

COURSE OUTLINE

Plant Documentation.

- The Role Of Plant Documentation, Standards And Specifications.
- Drawing Types And Standards.
- Standards Organizations (isa, Iec, Iso).
- Understanding Diagram Layouts And Formats Cross References.

- Iso 9002 And Document Control.

- Api Rp14f – Section 12.2 – Electronic Instrumentation.

- Isa Standards Library For Automation And Control.

- Specification Forms – Isa S20 –

Specification Forms For Process Measurement

June
2017

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Saturday

11

Sunday

COURSE OUTLINE

Instrumentation Documentation

Instrumentation Drawing/Layout

- Type of layout & drawing management.
- Piping & instrumentation diagram (P&ID)
- Process flow diagram.
- Logic diagram
- Loop diagram
- Control valve assembly.
- Mounting layout (supports, anchors, sleepers & guides).

Admission Procedure :

Submit Dully filled Admission Form, along with Registration Fee.

To,
SmartBrains Engineers & Technologist Pvt. Ltd.
H - 86, Sec - 63, Noida -201301
Email : info@smartbrains.in
Phone +91-8955-560-560, +91-120-410-4991

Mode of Payment :

Registration fee will be 50% of course module fee

Registration fee is acceptable by DD/ Cash or online bank Transfer

The DD should be in favour of SmartBrains Engineers & Technologist Pvt. Ltd. , Payable at Ghaziabad.

Online Bank Transfer should be in favour of SmartBrains Engineers & Technologist Pvt. Ltd.

PA/C NUMBER : 071805001090

PRTGS/NEFT IFSC CODE : ICIC0000718

Declaration



- Training programs provided in SmartBrains are approved, affiliated and certified by National Skill Development Corporation of India.
- SmartBrains has right to expel any student at any time for misbehavior, poor attendance without refunding the fees.
- Certification will be issued after successful completion of program followed by assessment examination.
- SmartBrains strictly follows rules and regulations of NSDC in conducting examinations and assessments.

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