

“Practical Instrumentation Training for Industrial Automation”



About US

iTECH Protomation and Controls Pvt. Ltd is an engineering and design company located in Bangalore, India having five division's "Engineering, System Integration, Inspection, Calibration and Training". Also iTECH is a registered system integrators for Invensys-Wonderware.

iTECH Protomation and Controls Pvt. Ltd have their own specialized Instrumentation and Automation cell to provide services in the field of Instrumentation and Control Systems Engineering, Design, Consultancy, Field services and also we provide hardware/software solutions for DCS, PLC, SCADA, HMI.

Training Division

The Training division has a world class learning environment, with state-of-art labs which are fully equipped with the latest configuration devices, test equipments and measurement tools. Also the in house "Pilot Plant" provides a realistic training environment where students can gain hands-on experience on the latest Process Control Instrumentation devices and the industrial automation controllers.

iTECH's main objective is to offer programs of the highest quality, which directly address current needs and demands of both individuals and industry. There is a demand for automation, instrumentation and control engineers around the world and we will mould you take those challenges.

The training program "Certified Automation Professional" is designed for instrumentation and automation professionals who need to have practical knowledge of selection, installation and commissioning of industrial instrumentation devices and automated control systems.

In many respects a clear understanding and application of these principles is the most important factor in an efficient process control system. You can only achieve excellent control of your process when your instrumentation provides the correct information. You will learn how to achieve effective results for the industrial processes you are responsible for, including the design, specification and implementation of control and measurement equipment. The material focuses on real applications, with attention to special installation considerations and application limitations when selecting or installing different measurement or control equipment. Practical Sessions of this program provides practical hands-on configuration of industrial instrumentation and highlights both the ease of setting up equipment and the traps and pitfalls that are often encountered.

The aim of this two week practical learning program is to provide you with core industrial automation skills. The program covers DCS, PLC, SCADA, Calibration, Engineering Drawings/Specification, Installation of instruments, Loop Checking, Logic Checking, Foundation Fieldbus technology, Segment design and Panel designing as well as new technologies and trends. There are eight modules running through the program to give you maximum, practical coverage in the field of industrial automation.

The 'hands-on' approach to training, so that delegates 'learn by doing' on modern industrial equipment. Training program created by iTECH are designed to be relevant to the candidate's needs and delivered in an interesting and enjoyable manner. All unnecessary theory and academic observations are dispensed with; only those aspects that directly underpin the knowledge and skills specified in the course objectives are covered.

The modules employ large numbers of practical activities where candidates are given the opportunity to 'learn by doing'. The use of real industrial components in practical exercises ensures that the experiences are realistic and relevant. This is made possible by a large investment in equipment used on the courses. No expense is spared when deciding what equipment a course needs. The modules offered by iTECH has a further level of detail made available for our clients to examine. This describes in detail what will actually be taught throughout the program.

COURSE PRESENTATION

The “Certified Automation Professional” is presented by some of the leading automation, instrumentation and control engineering instructors who are internationally experienced and are highly experienced experts from industry who have worked in the automation, instrumentation and control areas more than 15 years especially in the Oil & gas process plants.

PARTICIPANTS

Engineers and other technical professionals employed in automation and process industry can enhance their performance by upgrading solutions through practical courses. Also the course is ideal for the fresh engineering graduates and diploma holders with the instrumentation, electronics and process engineering back ground.

Modules, Duration, Timings and Fees

The following are the modules, duration, timings and fees structure for the “Certified Automation Professional” program conducted by iTECH Protomation & Controls Pvt. Ltd.

Module No.	Module Name	Duration, Timings and Fees
1	PLC [Programmable Logic Controllers]	Batch # 1 Duration: 2 weeks Timings: Mon to Fri: 13:00 ~ 18:00 Fees: 13,000 Rs/- + 10.3% S.Tax
2	SCADA [Supervisory Control and Data Acquisition]	
3	VFD [Variable Frequency Drives]	
4	Calibration of Field Instruments and Control Valves	
5	Foundation Fieldbus Technology and Segment Topology	Batch # 2 Duration: One Month Timings: Mon to Fri: 09:00 ~ 12:00 Fees: 15,000 Rs/- + 10.3% S.Tax
6	Control Panel and System Cabinets Designing	
7	Engineering Drawings and Specification Sheets	
8	Field Instrument Installation, Inspection, Loop Checking, Logic Test and Commissioning	

Features

- Accommodation arrangement's at Bangalore can be provided by iTECH @ 2500Rs/- for out station trainees, if required. The food has to be borne by the trainees. Pick-up and drop back to the nearest stations (railway/bus) will be arranged by iTECH at free of cost during the arrival and departure.
- The “Certified Automation Professional” program can be held on clients’ premises for a group of participants and also the program can be tailored to the clients’ needs and application.
- Also week-end batches are conducted for the working professionals, the duration of the course depends up on the selection of the training modules.
- The fees structure is inclusive of course material.

Placements

- 100% Job assistance will be provided.
 - Our Trainees has been employed in Power Plants, Petro-Chemical, Oil & Gas plants at India and abroad.
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Module - 1 : PLC [Programmable Logic Controllers]

Introduction to PLC & Relay Logic, Familiarization with Rslinx, Rslogix 500, Online monitoring, Searching, Data monitoring, Editing rungs On-line and Off-line, Communications between the programmer and PLC, Uploading and downloading PLC programs, Data Files, Custom data monitors, Graphical monitors, Processor status, monitoring for faults and fault resets, Forcing, Comments, Instructions (Analog & Digital, Scaling, Timers & Counters, Masked instructions, PID instructions etc) Printing, Help and shortcut keys.

Module - 2 : SCADA [Supervisory Control and Data Acquisition]

The development of new window viewer and window maker for the application. Graphics, objects, Buttons and sliders, Display and application windows, Text and text control, Wizards, Animation, Bar charts. Develop and understanding of drivers and data transfers between PLC's. Adding and amending alarms including creation Storage and archive. Adding and amending real Time Trending and historical trends. Reporting - archived data can be reported to paper. Introduction to various scripts. Security and Passwords. Using script to customize a project. Interfacing SCADA with PLC. Creating Smart Symbols. Application Publisher, Recipe Management. DDE configuration.

Module: 3 VFD [Variable Frequency Drives]

Introduction to AC Drives, Selection criteria of the drives, Advantages of VFD versus other starters, Basic structures of VFD, Remote and Local operation of VFD, Communication with PLC and SCADA Software, Troubleshooting, Case study and different applications of Drives in the industry.

Module: 4 [Calibration of Field Instruments and Control Valves]

This module covers the areas of Pressure, Flow, Level and Temperature pertaining to instrumentation and control. Calibration of Field instruments using Deadweight Tester, Manometer, hand pump and also programming of the transmitters by using the Rosemount 375 Communicator. Also the bench calibration of the control valves and the ON-OFF valve using the pneumatic signals.

Module: 5 [Foundation Fieldbus Technology and Segment Topology]

Introduction to FOUNDATION fieldbus technology, Fieldbus concepts, Fieldbus wiring and installation, Power requirements, Fieldbus segment topology, Setting the parameters in Resource Blocks, Transducer Blocks, Function Blocks, LAS (Link Active Scheduler). Configuration of field devices using 375 Foundation Fieldbus Communicator, Verifying the Fieldbus wiring by using the Wiring Validator FBT-5 and using the Fieldbus Monitor FBT-3 to test the voltage, signal levels and noise on the segment.

Module: 6 [Control Panel and System Cabinets Designing]

Local control panel layout and internal components design, installation of relay modules, installation of DIN rail and terminal blocks, internal wiring between the components. Energizing and testing of the control panel as per the schematic drawings.

Module: 7 [Engineering Drawings and Specification Sheets]

Preparation of engineering drawings such as PFD (Process Flow Diagram), P&ID (Piping & Instrument Diagram), ILD (Instrument Loop Diagram, ISD (Instrument Segment Diagram), Instrument location plan, Main cable and Branch cable Layout, Cable schedule, Hook-up details, Air line drawings, instrument specification sheet.

Module: 8 [Field Instrument Installation, Inspection, Loop Checking, Logic Test and Commissioning]

Field instrument installation, cable laying, termination, impulse line between the process line and the instruments, air line sub-header installation, pneumatic tubing for the control valves, meggering and continuity test, loop checking from the field to the control room using the ILD (Instrument Loop Diagram), function check using the Logic diagram and commissioning of the field devices. Field inspection procedures as per the QCP (Quality Control Procedure), ITP (Inspection and Test Plan) and the international standards, such as API, ISA, IEC, NEC, NEEMA, IP etc.

Contact Details

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