



Training Course :

## Commissioning and Troubleshooting Control Systems

Training Course For One Week In

UAE , Dubai , Cityseason Suites  
Hotel

Which Be Held As Under Details :



**Abar Solutions Petroleum Consultancy Invite Your Employee To Participate With Us In Special Training Course As Under Details :**

Course Name		Commissioning and Troubleshooting Control Systems			
Code	Period	Language	Start	End	Location
ICT 004	5 Days	Bilingual (Arabic & English)	13/08/2017	17/08/2017	UAE , Dubai , Cityseason Suites Hotel
			03/09/2017	07/09/2017	
			08/10/2017	12/10/2017	
			12/11/2017	16/11/2017	
			10/12/2017	14/12/2017	
			14/01/2018	18/01/2018	
			11/02/2018	15/02/2018	
			11/03/2018	15/03/2018	
			15/04/2018	19/04/2018	
			20/05/2018	24/05/2018	
			10/06/2018	14/06/2018	
22/07/2018	26/07/2018				

**\*\* The Fees Includes : Lecturer , Training Material , Training Room With One Coffee Break Daily , Certificate Of Attendance In Last Day Training Course \*\***

**Course Description**

⇒ You need a methodical approach to start-up of single and multi-loop control systems. You also need an understanding of how pressure, level, flow, and temperature loops operate to maintain good process control systems, along with a familiarity with the loop check-out procedures. This seminar focuses on the commissioning and start-up of control systems, identifies the control systems problems that you may face, discusses commissioning as well as troubleshooting and suggests effective solutions to problems faced during operations.

**Course Objectives**

- ⇒ To familiarize participants with procedures and to provide them with solutions to problems encountered during commissioning, start-up, and operation of control systems

### Course Content & Outlines

⇒ **Commissioning and Start-Up Procedures**

- Procedures for new control systems
- Procedures for existing systems
- Refreshments and Networking

⇒ **Single Loop Feedback Control**

- Measurement concerns
- Controller operations
- Signal conditioners
- Troubleshooting using simulation techniques

⇒ **Multi-Loop Control Systems**

- Feedback control loop
- Cascade
- Feedforward / Ratio
- Examples of multiloop control
- Boiler three element control
- Starting up a cascade control loop
- Starting up a feedforward loop

⇒ **PLC Control Systems**

- Data acquisition System (DAS) - new technology
- Supervisory control and data acquisition (SCADA)
- PLC control system architecture
- PLC communication buses and data basis
- HMI (graphic, trend and alarm)
- PLC control system modules/subsystems
- PLC redundancies issue (hot standby/switchover)
- PLC scan time
- Troubleshooting-discrete I/O and analogue loops
- PLC application batch control and continuous control
- Case study

⇒ **Discrete Control Systems (DCS)**

Tel. : (965) 22610021 , (965) 99600277

Fax : (965) 22630021

Email : [info@abarsolutions.com](mailto:info@abarsolutions.com) , [abar-solutions@hotmail.com](mailto:abar-solutions@hotmail.com)

Wsite : [www.abarsolutions.com](http://www.abarsolutions.com)

- DCS architecture
- DCS communication buses and data bases
- DCS control system modules/subsystem
- HMI (graphic, trend and alarm)
- DCS internal communication
- DCS redundancies issues
- DCS communication with PLC
- DCS used in continuous process control
- DCS used in batch control
- Case study

⇒ **Developing Optimizing Strategies**

- Control loop narrative and documentation
- Hardware acceptance test (HAT)
- Software acceptance test (SAT)
- Factory acceptance test (FAT)
- As shipped software
- Site acceptance test
- As commissioned software
- Case study

⇒ **Start-Up Concerns**

- Safety process to start-up
- System boundaries
- Mechanical completion package
- Loop test procedures for analogue and discrete
- Check and test (CAT)
- Troubleshooting discrete I/O
- Troubleshooting analogue I/O
- Function tests (fluids and power)
- Tuning loops and pulse outputs
- Commissioning test
- Turn-over documentation
- Case study