



Training Course :

Programmable Logic Controllers (PLC) & Scada System

Training Course For One Week In

Malaysia , Kuala Lumpur , Fraser
Place Kuala Lumpur

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		Programmable Logic Controllers (PLC) & Scada System			
Code	Period	Language	Start	End	Location
ICT 024	5 Days	English	07/08/2017	11/08/2017	Malaysia , Kuala Lumpur , Fraser Place Kuala Lumpur
			04/09/2017	08/09/2017	
			09/10/2017	13/10/2017	
			13/11/2017	17/11/2017	
			18/12/2017	22/12/2017	
			15/01/2018	19/01/2018	
			12/02/2018	16/02/2018	
			12/03/2018	16/03/2018	
			23/04/2018	27/04/2018	
			14/05/2018	18/05/2018	
			11/06/2018	15/06/2018	
09/07/2018	13/07/2018				

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

Course Description

- ⇒ For many of its early years, the PLC’s role was confined to simple sequence control and interlocking. Later, however, with the advance of increasingly sophisticated microprocessor technology, analog capability – particularly PID control – became an integral part of the PLC functionality.
- ⇒ However, since the PLC could not function efficiently by itself, the NT-based Supervisory Control And Data Acquisition (SCADA) systems was introduced to become the PLC/SCADA – competing directly with advanced DCS systems.
- ⇒ Unfortunately, the PLC/SCADA system is still both widely misunderstood and widely misapplied.

- ⇒ This workshop, PLC & SCADA Systems: Operations & Maintenance is designed to provide engineers and technicians with the basic theoretical and practical understanding of PLC and SCADA systems and how this can be applied to optimize their systems in terms of safety, flexibility and costs.

Course Objectives

- ⇒ **Designed for both novice and experienced engineers and technicians, this workshop provides an insight into modern PLC and SCADA practices through an in-depth investigation into the four basic elements of any system:**
- The process;
 - The hardware;
 - The software; and
 - The environment.
- ⇒ **Throughout the workshop, participants will learn through active participation using exercises, questionnaires, and practical simulation sessions covering:**
- Hardware diagnostics
 - Basic programming
 - Advanced programming
 - Operations
 - Maintenance
 - Implementation of different algorithms
 - Implementation of various communication strategies

Course Content & Outlines

- ⇒ **Basic components of PLC**
- Fundamentals principles
 - CPU
 - Memory
 - I/O section and addressing
 - Digital I/O modules
 - Analog I/O modules
- ⇒ **PLC programming**
- Ladder logic instructions
 - Basic arithmetic instructions
 - Matrix logic

- File or block manipulation
- Jump, skips and subroutines
- ⇒ **PLC instruction sets**
 - Memory organization
 - Input/output addressing
 - Duplicate coils
 - Timers
- ⇒ **Installation Practices**
 - Interference or noise reduction
 - Cable spacing and routing
 - Earthing and grounding
 - Safety circuits
 - Control room requirements and layout
- ⇒ **Code quality and maintenance**
 - Program maintenance
 - Change procedures
 - Defect detection
 - Quality measurement and demonstration
- ⇒ **Advanced programming**
 - Matrix logic
 - Multiplexing
 - Coding/decoding
- ⇒ **Analog control**
 - Analog inputs
 - Signal filtering
 - Analog control
- ⇒ **Fault tolerance**
 - Improving system availability
 - Hot standby systems
 - Cold standby
- ⇒ **Serial Data Communications**
 - RS-232/485 Standards

- Modbus Protocol
- Local Area Networks
- Ethernet
- Token Bus
- ⇒ **Safety related systems**
 - Safety lifecycle
 - Systematic failures/rates
 - Voting systems
 - Software reliability
 - Field equipment
- ⇒ **Upgrading Strategies**
- ⇒ **Simulation and testing**
 - Factory acceptance testing (FAT)
 - Transport and reassembly
 - Simulation packages
 - Physical test panels
 - I/O emulation systems
- ⇒ **Problem Isolation and Testing**
- ⇒ **SCADA Hardware**
 - Field level Instrumentation and control
 - Marshalling terminals and RTUs
 - Communication System
 - Master Stations
- ⇒ **SCADA Software**
 - Communications protocol
 - Data objects
 - Interchangeability
 - Proprietary systems
- ⇒ **DNP3 and IEC 60870**
 - Profiles
 - System Topology
 - Architecture