BAYUBALI LEARNING SOLUTIONS

PROCESS CONTROL ENGINEERING, STRATEGIES AND APPLICATION TECHNOLOGY COURSE

Training Date:	As per schedule	**Training Venue:**	Kuala Lumpur
Basic Fee:	RM3,450.00 + SST per participant (this includes course materials, meals, refreshment and attendance certificate)		

DURATION

21 hours (Three (3) days)

TARGET GROUP

Plant or process supervisors, team leaders, instrument engineers, lectures and others who need to upgrade the knowledge and a comprehensive review or new experience of advanced process control.

TARGETED INDUSTRY/INDUSTRIES

Oil and gas industries, power plant, petrochemical plant, pump oil plant, food industries and others related industries.

CERTIFICATION

This course can be certified for the continuing professional development program likes the program by the board of engineers Malaysia, TEVT, Malaysia skill certificate and instrumentation competency certificate.

COURSE OVERVIEW

The course exposes participants to the various process control loop and their characteristics, proper modes selection, configuration; Enhanced PID control system; and multivariable loop. Participants will be taught on Basic Tuning, simple and most difficult control application in the plants and how to overcome some difficult process.

COURSE OBJECTIVE

The objective of the program is to provide instrument engineers, plant tech, plant operators and others plant personnel with a good knowledge and skill so that they can optimum operating plant.

COURSE OUTCOMES

At the end of the course, the participants should be able to:

- Explain the process behaviour and effect of order lag on control system.
- Identify the problems of plant control.
- Select proper control modes for various process control applications.
- Identify the combination type of process control.
- Tuning the control loop.
- Differentiate the advanced and basic control system.
- Explain the general guidelines for cascade, split range and ratio control.
- Understand the basic principles of dead time and predictive control.
- Outline the structure of the control equation contained in a feed forward controller.
- Understand the problems associated with multivariable control and the solution approaches that are available to solve these problems.
- Apply multivariable control systems.

TRAINING METHODOLOGY

- Lecture
- Classroom discussions
- Short video presentation
- Case study

COURSE CONTENTS

- Proportional, integral and derivative algorithm.
- Transfer function of close and open loops.
- Process behaviour
- Stability and frequency response analysis, root locus analysis, improving the steady state error and transient response.
- Optimum control setting.
- Advance control level one; cascade control, split range control, selector control, non-linear and basic ratio control, (the need and setting parameters).
- Ratio and feed forward control, mass and energy heat balance approach.
- Feed forward control, lead, lag, gain and dead time compensator approach.
- Multivariable control loop; modelling, prediction, coupler decoupler controller, smith predictor and internal multivariable control (IMC).
- Supervisory control system.

- Introduction to optimization and constrain control.

- Development of control system to control distillation column and other examples of plant application control.

ABOUT THE INSTRUCTOR

Engr. Azahar bin Mat Noor, graduated with Bachelor of Engineering (Honors) in Electrical Engineering and major in control system from the University of Technology Malaysia.
He is a Registered Professional Engineer (Mechanical) with Board of Engineer, Malaysia and a Member, The Institution of Engineers, Malaysia. He also holds an Instrumentation and Control System certificate from YEW Mitaka, Tokyo.

He had working experiences with several companies such as the Institute Technology Petroleum Petronas (INSTEP) and Centre for Instructor and Advanced Skill Training (CIAST). Since the past 20 years in teaching, he had delivered for several courses such as;

- Process Design and Process and Instrumentation for process engineer.
- Process control technology for Instrument Engineer.
- Process control technology and application.
- Control valves service and repair.
- Instrumentation and measurement Engineering.
- Basic Instrumentation and Fundamental of Process Control.