

Who Should Attend?

Our training is designed for practitioners. This workshop— *Techniques of Applied Process Control* – is a three-day, hands-on workshop ideally suited for individuals who operate, maintain and improve their plant’s core process control infrastructure.

What Will You Learn?

As with all our workshops, we focus on practical knowledge and proven techniques. Our workshops provide participants with the understanding needed to accurately evaluate and troubleshoot regulatory control system performance. Participants will also learn how to apply a systematic approach with common control strategies to improve the control over their plant’s business-critical processes.

How Do We Teach?

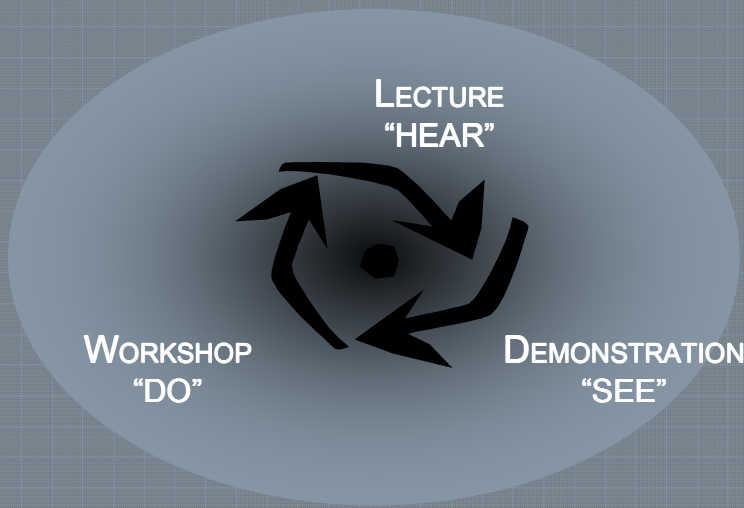
Control theory is complex, so our approach to training is simple: focus on the application of techniques rather than on the derivation of formulas. Our workshops are hands-on and interactive, engaging participants in the examination of real-world processes. By reinforcing traditional lectures with demonstrations and workshop exercises, we empower you to apply innovative techniques immediately and with confidence.

Our Instructor

Barry Martin, Engineering Director has 20 years experience in the control, instrumentation, and manufacturing information system fields. He regularly assists companies in the oil & gas, chemicals, power, consumer products, and manufacturing industries; including Shell, Petronas, Lucite Chemicals, BASF PETRONAS Chemicals, and Procter & Gamble. His main focus is to create process control optimization solutions, ensuring maximum performance of customer's control system assets.

HEAR-SEE-DO METHODOLOGY:

“People learn in different ways, so our courses incorporate three important and complementary methods of training – traditional lectures followed by graphic demonstrations followed by hands-on workshops. Content is delivered in a format that individuals can easily digest and each method of training reinforces the other.”



Douglas J. Cooper, PhD
Founder & CTO
Control Station, Inc.

Secure Your Competitive Advantage Take Control & Register Today!

DAY ONE (8.30 AM to 5.00 PM)

Provides an introduction to process control and process dynamics and explores the impact of instrumentation on control. Participants review the objectives of and issues associated with the typical final control elements. The PID controller is introduced with special focus on P-only control.

- **Basic Process Control**

ASSESSMENT: Basic Process Control and Terminology

- **Process Dynamics**

WORKSHOP: Exploring Dynamics of Gravity-Drained Tanks

- **Signals, Aliasing and Noise**

WORKSHOP: Input Aliasing 1 and 2

WORKSHOP: Noise Filtering

- **Pumps and Valves**

ASSESSMENT: Pumps

ASSESSMENT: Valves

- **PID Controller, Forms and Modes**

- **Proportional Control**

WORKSHOP: P-Only Control of Tank Level

DAY TWO (8.30 AM to 5.00 PM)

Begins with a rapid review of Day One's topics before exploring the full capabilities of the PID controller. Participants will learn techniques for evaluating underperforming PID controllers and a systematic approach for analysis and tuning. Participants will also gain a clear understanding of the strengths and weaknesses of common control structures.

- **Day One Review**

- **Integral Action and PI Control**

WORKSHOP: Hazards of Tuning PI Controllers by Trial and Error

- **Formal Approach to Controller Design**

WORKSHOP: PI Control of a Heat Exchanger

- **Derivative Mode and PID Control**

WORKSHOP: PID Control of a Heat Exchanger

- **PID Control with Derivative Filter**

WORKSHOP: PID with Filter Control of a Multi-Tank Process

- **Process Simulation**

WORKSHOP: Modeling and Simulating Control of a Single Loop Process

- **PID Controller, Forms and Modes**

- **Proportional Control**

WORKSHOP: P-Only Control of Tank Level

DAY THREE (8.30 AM to 5.00 PM)

Begins with a rapid review of the prior day's curriculum before tackling advanced approaches to the control of dynamic process behavior. Participants learn techniques for evaluating advanced control architectures and determining optimal control strategies.

- **Day Two Review**

- **Adaptive Control**

WORKSHOP: Adaptive PI Control of Non-Linear Processes

- **Dynamics of Non Self-Regulating (Integrating) Processes**

WORKSHOP: PI Control of a Pumped Tank

- **Cascade Control**

WORKSHOP: Single Loop Control of a Jacketed Reactor

WORKSHOP: Cascade Control of a Jacketed Reactor

- **Feed Forward Control**

DEMONSTRATION: Feed Forward Control of an Ideal Process

- **Interacting Variables: Decoupling**

WORKSHOP: Interacting Control of Custom Process

Bring your Laptop & get a copy of LOOP-PRO DEVELOPER™

Each participant is required to bring along their PC to complete the 15 hands-on workshops presented throughout the course. Control Station's LOOP-PRO DEVELOPER™ will be used during the training. The software includes several high level simulated case studies including gravity drained tanks, heat exchanger, furnace air/fuel ratio, distillation column, etc that will be used for the majority of the workshop exercises.

The software also has an offline simulation module that will be used to conduct simulations using models developed from typical plant data. "What-if" studies will be executed to design and test architectures that improve operational performance of the control system.

The process model and tuning calculations will be completed by hand to ensure all participants master the principles of the material presented. LOOP-PRO's visual based analysis and tuning module will also be incorporated to highlight the benefits of using software tools.

Companies that have already benefited from attending the workshop



Registration Slip - Techniques of Applied Process Control

4 Oct – 6 Oct, 2011

New World Suite Hotel, Bintulu, Malaysia

Company			
Address			
Name	Participant 1	Participant 2	Participant 3
E-mail			
Designation/Dept:			
Investment:	MYR 3700 x <input type="text"/> =		