PID LOOP TUNING & ADVANCED PROCESS CONTROL STRATEGY TRAINING

Practical and fundamental training to help you:

- Identify and solve process control problems
- Tighten process control
- Improve product quality
- Reduce energy usage
- Increase profitability

Columbus, OH — March 19-21, 2019

Designed for engineers and technicians, classes will cover basic terminology and building blocks of process control as well as fundamentals and advanced process control techniques using our fully automated, award-winning control solutions.

This is universal PID loop tuning and advanced strategy training. The skills you learn will benefit you regardless of your control system. Software is used for simulation exercises during class, but this is NOT product training.

ControlSoft Inc. was founded in 1985 by distinguished professors and graduate students from Case Western Reserve University, whose systems and control engineering program is consistently ranked among the best in the world. This strong relationship with one of the nation's most outstanding research institutions has provided ControlSoft with some of the best national and international experts in the field of process control automation.

LEARN FROM THE EXPERTS IN PROCESS CONTROL

CONTROLSOFT
ADVANCED PROCESS CONTROL MADE EASY

Who Should Attend?

Engineers, technicians, and operators who have the responsibility for building or maintaining a process and/or need to set up, use, evaluate, or tune PID loops, complex control strategies, or advanced controls.

ControlSoft holds seminars throughout the country and also does onsite training for groups. We would be delighted to reserve space for you in any of these locations or offer your group an onsite quote.

Fill out the application form to register for training. Class runs from 8:30 a.m. to 5:30 p.m. each day.

ControlSoft uses software to simulate loop tuning and advanced process control; each student does hands-on exercises to practice the techniques in real-time situations.

Practical Experience

Each student will have the opportunity to work with the same software tool that the instructor will be using to develop, test, and simulate the applications.

- Instructor uses both PowerPoint presentations and real process simulation during these training classes.
- This is not product training; the skills you learn will benefit you regardless of your control system.

Please call 440-443-3900 to discuss your training needs.

Thank you!

ControlSoft Training Coordinator
training@controlsoftinc.com

SESSION DETAILS

Professional Hours: Attendees who successfully complete the training will receive a certificate equal to 15 PDHs for the 2-day training class. These can be put toward any qualifying certification, including PE status. Please confirm your own state's requirements for classes.

To register, please fill out the information below and send registration form and payment information by **fax to 440-443-0249** or email to **training@controlsoftinc.com.**

Name: _____

Title: _____

Company: _____

Address: _____

City, State & Zip: _____

Phone No.: _____ Fax No.: _____ Email: _____

2019 Training: ☐ Columbus, OH — March 19-21, 2019* (* Optional day 3 for boiler tuning. Ask us for details.)

Amount: ☐ $2,250 (for 2-day training) | ☐ $3,375 (for 3-day training)

Payment By (check box): ☐ Check ☐ P.O. ☐ Credit Card* Check or P.O. No.: _____

* If paying by credit card, please call our training coordinator at 440-443-3900 or provide the best phone number and time for a return call to process your payment (ph: _____ time: _____).

ControlSoft: *Highest Rated in Exceptional Service* by Control Magazine Readers

FREE PID Loop Tuning Tips Pocket Guide available at **www.controlsoftinc.com**

Publication TRN102W(SLS)-EN — November 2018

PID Loop Tuning — DAY 1

Summary

You'll learn the fundamentals of PID control, its variations, and things that are important to know in evaluating the health and tuning of PID loops, as well as how to tune a PID controller.

- Students learn an easy-to-use 3-step approach for tuning PID loops and how to recognize when tuning is not the root cause issue.
- PID loops will be simulated and demonstrated using software-based process simulations.
- **Hands-on exercises** let you practice these techniques in real-time simulation.

Applications Reviewed	Standard Applications	Difficult Applications
Using the provided software, students will simulate, tune, and build control strategies for standard and difficult applications. The results can be seen and evaluated instantly.	• Temperature • Pressure • Flow • Level	• Inline Blending • Cascade PID Loops • Long Deadtime

Agenda

1	Understanding Process Control	4	Tuning Techniques
2	Fundamentals of PID Control	5	Tuning Practice
3	Control and Tuning Objectives	6	Adaptive Tuning and Advanced Topics

Advanced Process Control Techniques — DAY 2

Summary

You'll learn the best practices and techniques for process control strategies beyond PID control, as well as design, tuning, and common implementation pitfalls.

- Each strategy will be simulated and demonstrated using software-based process simulation in class.
- **Hands-on exercises** let you practice these techniques in real-time simulation.

Applications Reviewed	Standard Applications	Difficult Applications
Using the provided software, students will simulate, tune, and build control strategies for standard and difficult applications. The results can be seen and evaluated instantly.	• Standard PID • Model-Based Control • Cascade Control • Long Deadtime • Gain Scheduling • Feedforward Control • Heat/Cool Split Range	• Interacting PID Loops • Long Deadtime Processes • Multi-Output Control • Extruder Control

Agenda

1	PID Control	5	Override Control
2	Cascade Control	6	Long Deadtime Processes
3	Feedforward Control	7	Robust Model Predictive Control
4	Gain Scheduling and Multiple PID		

Boilers & Power Generation Processes — DAY 3

Summary

You'll learn about critical boiler control loops and control methods, as well as design, tuning, and common implementation pitfalls that often make proper boiler tuning so challenging.

- Boiler control loops will be simulated and demonstrated using software-based process simulations.
- **Hands-on simulations and exercises** let you practice these techniques in real-time simulation.

Agenda

1	Boiler Control	6	Trim Control Principles and Uses
2	Load Demand Control	7	Function Generators Characterization
3	Boiler-Following Mode	8	Tuning Combustion, Boiler and Emission Control Loops
4	Turbine-Following Mode	9	Application of One-shot Cascade Tuning
5	Coordinated Control	10	Specific Tuning Principles and Procedures

ControlSoft Process Control Training

PID LOOP TUNING & ADVANCED PROCESS CONTROL STRATEGY TRAINING

Learn PID loop tuning & process control strategy from the experts in process control.

Practical & Fundamental Training For Your Technical Staff

- Identify and Solve Process Control Problems
- Tighten Process Control
- Improve Product Quality
- Reduce Energy Usage
- Increase Profitability

Please pass along this information to other engineers in your company as applicable. Or send us the contact info for anyone who might benefit from attending these classes and we'll be happy to contact them directly. Thank you!

Our trainees say it best:

"Simulation and tuning exercises very good and realistic; very good class. Instructor was fantastic."
-- Sr. I&C Engineer

"The first-day training really hit home on PIDs in general. The instructor's knowledge of loops and ability to relate it back to a real-time application was helpful. I left feeling more confident in my tuning ability. I would definitely recommend this class to others."
-- I&E Technician

"The instructor really knows his subject. One of the best classes I've ever attended."
-- Maintenance Chief

"The class covers a lot of material, in a short period of time, overall a tremendous eye-opener!"
-- Manager, Performance Engineering

Register early. Classes fill up fast.

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An Exceptional Opportunity to Learn

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