

# 2017 Course Catalog

## Curriculum:

### Day One:

#### Fundamentals of Process Dynamics

- Demonstration: Modeling Process Dynamics
- Exercise: Exploring Dynamics of Gravity-Drained Tanks

#### Proportional Control

- Demonstration: Implementation of P-Only Controllers
- Exercise: P-Only Control of Tank Level

#### Integral Action and PI Control

- Exercise: Hazards of Tuning PI Controllers by Trial and Error

#### Formal Approach to Controller Design

- Exercise: PI Control of a Heat Exchanger

#### Derivative Model and PID Control

- Demonstration: Modeling Process Dynamics
- Exercise: Exploring Dynamics of Gravity-Drained Tanks

#### PID Control and Derivative Filter

- Demonstration: PID with Filter Control of a Heat Exchanger
- Exercise: PID with Filter Control of a Multi-Tank Process

### Day Two:

#### Systematic Approach to Real-World Processes

- Demonstration: Simulation and Control of a Heat Exchanger
- Exercise: Modeling and Simulating Control of a Single Loop Process

#### Cascade Control

- Demonstration: Single Loop Control of a Jacketed Reactor
- Exercise: Cascade Control of a Jacketed Reactor

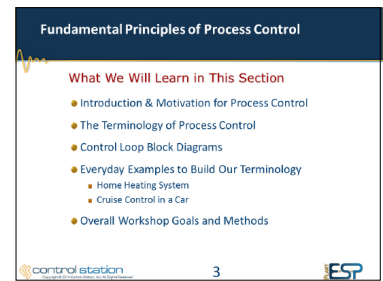
#### Feed Forward Control

- Demonstration: Feed Forward Control of an Ideal Process
- Exercise: Feed Forward Control of a Jacketed Reactor

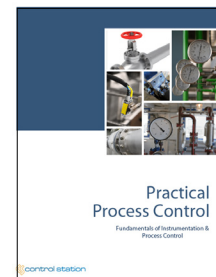
#### Dynamics of Non Self-Regulating Processes

- Demonstration: Controlling a Non Self-Regulating (Integrating) Process
- Exercise: Modeling and Simulating Control of a Pumped Tank Process

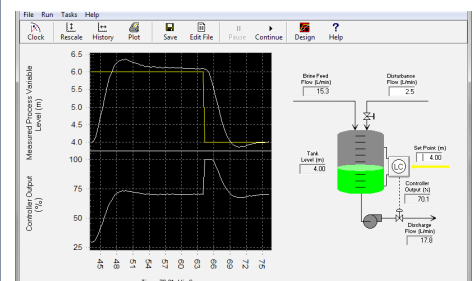
## Sample Content:



*A sample of the 300 slide lecture*



*The cover of our Practical Process Control textbook*



*Our process simulation tool*