Course Overview

Course number: APC-0002
Course length: 4.5 days

Are you considering implementing a multi-variable controller in a polymer plant?

This course introduces the Profit®NLC technology and its application to the polymer process industry. The course objective is to provide the Process/Control Engineer with an understanding of the technology, and provide him with the tools necessary to evaluate the performance of a non-linear multi-variable controller in an offline environment. The following topics are covered through a series of lectures and hands-on exercises.

- Polymer Dynamic Modeling System Overview (PDMS).
- Example PDMS Flowsheet Model Development
- Introduction to the offline environment - APC Studio
- Controller Configuration
- Running Controller in Different Modes
  - Steady State
  - Model Parameter Update
  - Dynamic Simulation
  - Replay of Plant Data
  - Full Interactive Simulation and Control
- State Estimation – IDF and MHE technologies.
- Typical NLC Project Execution Methodology
- Taking the Controller Online

The course presents the basic concepts and strategies needed to develop, test and prepare a Profit®NLC control application for deployment online. It includes extensive hands-on lab exercises where participants will create, configure and test a control application. Lab exercises will include basic application troubleshooting.

Course Benefits

Understanding the Profit®NLC Controller technology

- Understand the Profit®NLC technology with particular emphasis on application to the polymer industry
- Gain the basic skills necessary to maintain a Profit®NLC application
- Perform what-if studies for developing transition strategies and troubleshoot plant incidents.

Course Delivery Options

- In-Center Instructor-Led Training
- On-Site Instructor-Led Training

Who Should Take This Course?

Process and Control Engineers interested in exploring the power of model based non-linear control technology.

In particular those engineers responsible for implementing and maintaining advanced control applications on a highly non-linear process such as polymer plants.

Prerequisite/Skill Requirements

Prerequisite Course(s)
- None

Required Skills and/or Experience
- Process Engineering or Control Background
- Working knowledge of Windows operating system.

Desirable Skills and/or Experience
- Plant, process, and controls knowledge
- Knowledge of polymer processes.
- Knowledge of process dynamics and some exposure to multivariable control.
Course Topics

You will learn how to....

- Take a dynamic process model of a polymer plant and embed it in a controller.
- Take the controller and model and perform steady state simulations of the process.
- Perform parameter updates to improve the model’s predictions against plant measurements.
- Tune the control action through dynamic simulations.
- Tune the internal state estimation feedback algorithm.
- Run simulations of product transitions, production rate changes etc.
- Understand the steps needed to implement a controller project.
- Understand the additional steps needed to take the offline controller model and deploy it online to control a real process.

Additional Training

To increase your knowledge and skills, there are additional courses available from Automation College.

For more information and registration, visit www.automationcollege.com.