Advanced Process Control Tutorial and Simulation


Tutorial/CBT:

This interactive course explains the Advanced Concepts of Process Control and Dynamics using Voice, Video, Animation and Graphics.

Introduction
- Overview of Conventional Control
- Overview of Advanced Control
- Block Diagrams
- Definitions

Process Dynamics
- Introduction
- Process Characteristics
- Linear Systems

PID Controller
- Introduction
- PID Gap Controller
- Variations of PID Controller
- Advanced Options in PID Controller
- Computer Control

Adaptive Control
- Introduction
- Gain Scheduling
- Auto Tuning
- Self Tuning Regulator
- Model Reference Adaptive Control

Dead Time Compensation
- Introduction
- Smith Predictor Algorithm
- Implementation

Feedforward Control
- Introduction
- Steady State Feedforward Control
- Dynamic Feedforward Control
- Feedforward Algorithm
- Combined Feedforward and Feedback Control

Non-Interacting Control
- Introduction
- Interaction Analysis
- Decoupler Design

Computed Variable Control
- Introduction
- Internal Reflux Control

Model Predictive Control
- Introduction
- Process Model
- Model Predictive Control
- Key Parameters
- Example

Intelligent Control
- Introduction
- Neural Network Based Control
- Fuzzy Logic Control

- Tutorial has a built-in Quiz and comes with a Learning Management System (LMS) called TutAdmin. The LMS allows an instructor to register trainees and monitor their performance and Quiz scores
- Tutorial is available as a Standalone or Web based application

GSE Systems
www.gses.com/EnVision
**Simulation Modules:**

**Distillation Process Control Modules**
- Dead Time Compensation Control
- Non-Interacting Control
- Internal Reflux Control
- Dual Composition Control
- Model Predictive Control

**Furnace Process Control Modules**
- Furnace Combustion Control
- Furnace Pass Balance Control

- Simulation comes with a Learning Management System (LMS) called SimAdmin that allows an instructor to register trainees and monitor their performance
- Simulation is available as Standalone (Single or Dual Monitor) and Instructor-Trainee versions