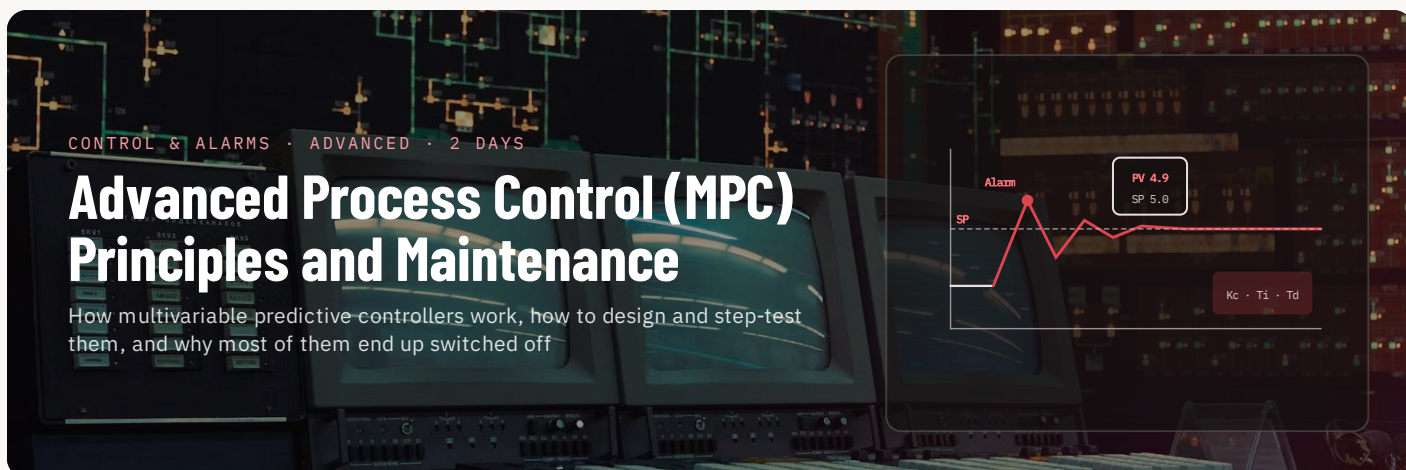




DURATION
2 days

LEVEL
Advanced

FORMAT
On-site classroom · virtual instructor-led

LANGUAGE
English

MAX. PARTICIPANTS
16

1

MPC design built end to end

3

step-test plans reviewed

12

monitoring KPIs for an APC application

Overview

An MPC application is a set of models, limits and economics that must be maintained like any other piece of equipment; the industry's experience is that half of them are off within three years. The course explains what a predictive controller actually does with its models and objective function, then works through the lifecycle that keeps it on: benefits estimation, base-layer preparation, step-test planning, model identification, commissioning, and the monitoring that detects model mismatch before the operators lose confidence. Exercises use a distillation column case in ProcessVision.

Learning outcomes

- Explain prediction, move suppression, constraint handling and LP/QP steady-state optimisation in operator and manager terms
- Estimate benefits and define the constraint set and economics for a candidate application
- Prepare the base layer: loop tuning, valve health, inferentials and instrument checks
- Plan and supervise a step test and identify models with adequate quality
- Commission an application: tuning weights, limit ranges, operator interface and hand-over
- Monitor service factor, constraint activity and model quality and decide when to re-identify

Who should attend

APC and control engineers, process engineers supporting APC applications, console supervisors and operations engineers who own the benefits

Course outline

DAY 1

Why APC pays: variability reduction and constraint pushing · MPC anatomy: models, prediction horizon, control horizon, move suppression · steady-state optimiser and economics · benefits estimation and functional design · base-layer audit with CeraControl · inferential and soft-sensor requirements · step-test planning: signals, amplitude, duration, PRBS

DAY 2

Model identification and model-quality judgement · controller tuning weights and limit ranges · operator interface, alarms and ISA-101 considerations · commissioning and benefit verification · monitoring KPIs: service factor, limits active, prediction error, model mismatch · sustaining: MOC for APC, re-identification triggers, roles · workshop on a column application in ProcessVision

Standards referenced

ISA-95 / IEC 62264 ISA-101 ISA-18.2 API RP 554
IEC 61131-3

Tools & exercises

Base-layer analytics, step-test planning and model discovery in ProcessVision (CeraControl) with CeraTrace historian trends

What's included

- ✓ Course manual and slide pack
 - ✓ Exercise and case-study pack
 - ✓ Software access for the course
 - ✓ Competency quiz and certificate
 - ✓ Post-course Q&A with the instructor
 - ✓ **INSTRUCTORS** ✓ Templates used in the exercises
- Practising engineers — TÜV HAZOP Leader, CCPSC and IEC 61511 Functional Safety certified — with 200+ years of cumulative plant experience.

PREREQUISITES

Control engineering background and loop-tuning experience; TR-E02 or equivalent

CERTIFICATION

Certificate of completion

Book this course or build a custom curriculum

On-site at your plant or virtual · in-house groups · competency assessment included

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