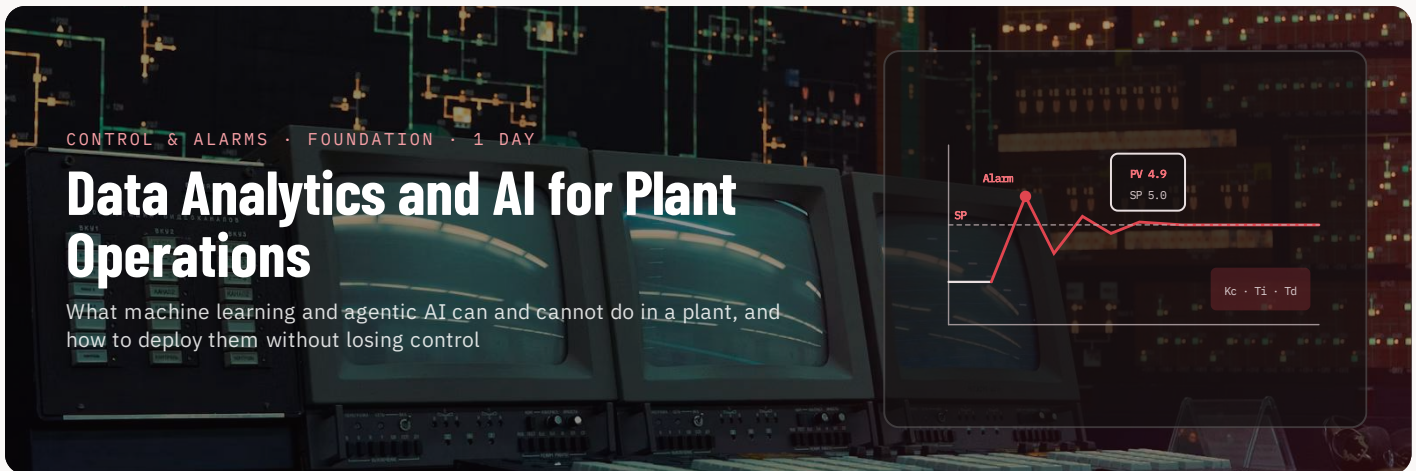




DURATION
1 day

LEVEL
Foundation

FORMAT
On-site classroom · virtual instructor-led

LANGUAGE
English

MAX. PARTICIPANTS
16

4

worked use cases: assets, process, energy, quality

1

explainability exercise on a real alert

1

guardrail checklist for agents

◆ Overview

Most plant AI projects fail on data, not algorithms, and most of the rest fail because the operators do not trust an alert they cannot explain. This course gives engineers enough understanding of anomaly detection, predictive models and large-language-model agents to judge a vendor's claims, scope a use case, and set the guardrails a safety-critical facility needs. It uses Kairos as the worked example, from condition-monitoring data models to explained alerts and agent permissions.

◆ Learning outcomes

- Describe the main analytics types — descriptive, anomaly detection, predictive, prescriptive — and match each to a plant problem
- Assess data readiness: historian coverage, tag quality, context data, lab and maintenance records
- Explain how asset and process health models are trained, validated and drift over time
- Read an explained alert and decide what action, if any, an operator should take
- Define guardrails for agentic AI: read-only vs write actions, approvals, audit trails, cybersecurity
- Build a business case and a pilot plan with measurable success criteria

◆ Who should attend

Operations, process and reliability engineers, control-room supervisors, digitalisation leads and managers evaluating AI projects for the plant

◆ Course outline

MORNING

Analytics landscape for plants: from trends to agents · data foundations: historian, OPC UA, context and asset hierarchy (ISA-95) · condition monitoring and health indices per ISO 13374 and ISO 17359 · anomaly detection and predictive models: how they learn and how they fail · worked cases: rotating equipment health, heat-exchanger fouling, energy and quality

AFTERNOON

Explainability: why an alert fired and what it means for the operator · human-in-the-loop design and alarm-system integration (ISA-18.2) · agentic AI: what an agent may read, recommend and do · guardrails, approvals and IEC 62443 zones for AI systems · pilot scoping and success metrics · Kairos walkthrough on a plant dataset

◆ Standards referenced

ISO 13374 · ISO 17359 · IEC 62443 · OPC UA (IEC 62541)
ISA-95 / IEC 62264 · ISA-18.2

◆ Tools & exercises

Worked examples and hands-on session in Kairos: health models, explained alerts and agent guardrails

◆ What's included

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

PREREQUISITES

None; plant operations or engineering experience assumed

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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