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COURSE BROCHURE

# Advanced Operational Excellence in the Process Industry Course

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Amsterdam

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Registered in the United Kingdom and Saudi Arabia

# Advanced Operational Excellence in the Process Industry Course

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Operational Excellence in the Process Industry is an advanced 2-week training course for plant managers, production engineers and continuous improvement leads in continuous and batch process plants, who leave with a Plant Excellence Roadmap that sequences loss reduction, reliability and energy projects. Feedstock costs, energy prices and emissions scrutiny now squeeze every tonne produced. Jupiter Prime Training runs this course for leaders who must raise throughput and yield without new capital.

## Why Operational Excellence in the Process Industry Matters Now

Three forces are reshaping process plants: owners demanding more output from ageing assets instead of new units, energy and emissions targets that turn every furnace and compressor into a cost and reputation issue, and a generation of experienced operators retiring with knowledge that was never written down. Plants that pursue excellence systematically recover hidden capacity, cut unplanned trips and lower energy per tonne; plants that rely on heroics lurch between turnarounds and firefighting. The course draws on overall equipment effectiveness OEE, Total Productive Maintenance TPM, Lean and DMAIC improvement cycles, and the process approach of ISO 9001 for standardising operations.

## Who Gains Most from Operational Excellence in the Process Industry

- Plant and area managers accountable for throughput, yield and cost per tonne
- Production and process engineers responsible for unit performance and operating envelopes
- Continuous improvement leads who select, run and sustain loss reduction projects
- Maintenance and reliability engineers whose work decides availability and trip frequency
- Energy and utilities engineers responsible for steam, power and cooling efficiency

A cross-functional leadership group from one site, with operations, maintenance and process engineering together, gains most, because loss trees and reliability priorities can only be agreed when all three functions sit at the table.

## Operational Excellence in the Process Industry Capabilities

Participants learn to read a process plant as a system of losses, then convert those losses into a ranked portfolio of improvements.

- Calculate OEE and asset utilisation for continuous units and batch trains — plant managers comparing lines and sites
- Build loss trees that separate availability, rate and quality losses — leadership choosing where to focus improvement
- Design standard work, operator rounds and shift handover for continuous operations — shift supervisors stabilising performance
- Align maintenance strategy with reliability-centred maintenance and criticality — maintenance managers allocating resources
- Assess energy intensity and yield through mass and energy balances — finance and engineering prioritising projects
- Specify tiered performance meetings with short-interval control — operations leaders escalating issues quickly

## Key Operational Excellence in the Process Industry Terms

- Overall equipment effectiveness OEE — the product of availability, performance rate and quality yield, showing how much of a unit's theoretical output is achieved.
- Loss tree — a structured breakdown of the gap between theoretical and actual output into trips, slowdowns, off-specification product and other categories.
- Total Productive Maintenance TPM — a maintenance approach that involves operators in care of equipment to prevent breakdowns and speed losses.
- Reliability-centred maintenance RCM — a method for choosing the maintenance task for each failure mode according to its consequences.
- Energy intensity — the energy consumed per unit of product, used to compare units, shifts and sites fairly.
- Tiered performance meeting — a short daily review cascading from shift to plant level, where deviations are raised and actions assigned.

## Operational Excellence in the Process Industry Day by Day

## Day 1: The Process Plant Excellence Landscape

- Continuous Versus Batch Operations Characteristics — Framing Improvement Priorities
- Operational Excellence Maturity Models — Benchmarking the Site Starting Point
- Value Drivers in Process Economics — Linking Throughput, Yield and Margin
- Process Approach in ISO 9001 — Standardising Plant Operations Within the QMS
- Stakeholder Mapping for Plant Change — Engaging Operations, Maintenance and Engineering

## Day 2: OEE for Process Units

- OEE Calculation for Continuous Units — Defining Nameplate and Demonstrated Rates
- OEE for Batch Trains and Packaging — Handling Changeovers and Cleaning Cycles
- Data Sources From DCS and Historian Systems — Automating Loss Capture
- Asset Utilisation Versus OEE — Reporting Constraints Outside Plant Control
- OEE Dashboards for Shift Teams — Making Losses Visible Every Day

## Day 3: Loss Analysis

- Loss Tree Construction — Separating Availability, Rate and Quality Losses
- Trip and Slowdown Logs — Classifying Causes of Lost Production
- Pareto of Production Losses — Selecting the Losses Worth Attacking
- Off-Specification and Rework Streams — Quantifying Quality Losses in Tonnes
- Bottleneck and Constraint Analysis — Identifying the Unit That Limits Output

## Day 4: Standard Work for Continuous Operations

- Operating Envelopes and Integrity Limits — Defining Safe Optimal Ranges
- Operator Rounds and Checklists — Detecting Abnormal Conditions Early
- Structured Shift Handover — Preventing Information Loss Between Crews
- Start-Up and Shutdown Procedures — Reducing Variability During Transitions
- Knowledge Capture From Senior Operators — Preserving Tacit Process Know-How

## Day 5: Reliability and Maintenance Alignment

- Asset Criticality Ranking — Directing Maintenance Effort to Production Impact
- Reliability-Centred Maintenance Decisions — Matching Tasks to Failure Consequences
- TPM Autonomous Maintenance Steps — Involving Operators in Equipment Care
- Bad Actor Analysis — Eliminating Repeat Equipment Failures
- Turnaround Scope Challenge — Balancing Downtime Against Reliability Risk

## Day 6: Energy and Utilities Optimisation

- Energy Intensity Benchmarks — Comparing Units and Shifts Fairly
- Steam and Condensate System Audits — Finding Leaks and Trap Failures
- Furnace and Boiler Efficiency Checks — Tuning Excess Air and Heat Recovery
- Compressor and Pump Energy Reviews — Matching Drives to Real Demand
- Flare and Vent Minimisation — Cutting Losses and Emissions Together

## Day 7: Yield and Quality Optimisation

- Mass Balance and Yield Accounting — Locating Where Product Disappears
- Critical-to-Quality Process Parameters — Linking Settings to Specification
- Statistical Process Control on Key Variables — Holding Units on Target
- Advanced Process Control Opportunities — Pushing Closer to Constraints Safely
- DMAIC Projects for Yield Losses — Structuring Root Cause Investigations

## Day 8: Tiered Performance Management

- Tiered Meeting Design — Cascading From Shift to Plant Leadership
- SQDC Performance Boards — Displaying Safety, Quality, Delivery and Cost
- Short-Interval Control — Correcting Deviations Within the Shift
- Escalation Rules and Response Times — Moving Problems to the Right Level
- Leader Standard Work — Sustaining Routines Through Manager Presence

## Day 9: Prioritising the Improvement Portfolio

- Opportunity Valuation in Tonnes and Margin — Ranking Projects by Impact
- Effort-Impact Matrices — Separating Quick Wins From Capital Projects
- Management of Change Screening — Protecting Process Safety During Improvements
- Capability Building for Improvement Teams — Developing Site Practitioners
- Benefits Tracking and Verification — Proving Gains Reach the Bottom Line

## Day 10: Practising the Plant Excellence Roadmap

- Applying Loss Tree Results — Setting the Roadmap's Priority Losses
- Applying Reliability and Energy Findings — Selecting Cross-Functional Projects
- Applying Tiered Meeting Design — Defining the Daily Management Rhythm
- Applying Portfolio Valuation — Sequencing Projects Across Quarters
- Plant Excellence Roadmap — Combining Losses, Projects, Owners and Measures

## Applying Operational Excellence in the Process Industry After the Course

- Build an OEE and loss tree for one critical unit using historian data, and present the top three losses at the next plant leadership meeting.
- Launch a tier-one shift meeting with an SQDC board on one unit and track whether deviations are closed within the shift.

## Operational Excellence in the Process Industry Questions FAQ

### What is operational excellence in the process industry and why does it matter now?

Operational excellence in the process industry is the systematic removal of production, reliability, energy and yield losses in continuous and batch plants. It matters now because owners expect more output from existing assets while energy costs and emissions scrutiny rise.

### Which roles gain most from operational excellence in the process industry?

Plant managers, production engineers and continuous improvement leads gain most from operational excellence in the process industry. Reliability and energy engineers also benefit, because their priorities must be agreed with operations through the same loss tree.

### How does operational excellence in the process industry differ from operational excellence in healthcare?

Operational excellence in the process industry focuses on units, trips, yield, steam and compressors rather than patient flow. You work with OEE for continuous plants, reliability-centred maintenance and energy balances instead of bed management and clinical pathways.

## What do you bring back from operational excellence in the process industry training?

You bring back a Plant Excellence Roadmap ranking your site's main losses, the projects that address them, their owners and the measures that will prove progress through tiered meetings.

## Operational Excellence in the Process Industry: The Way Forward

The Plant Excellence Roadmap first informs the site leadership decision on which losses to attack before the next turnaround. Plant managers, reliability engineers and improvement leads use it to align budgets and crews. After the first quarter, revisit the loss tree with fresh historian data, because energy prices and feed quality in refineries, fertiliser plants and food processing shift where the biggest losses sit.