

# Smart Manufacturing and Industry 4.0 Training Course

27 September – 1 October 2027
Paris

AGILE LEADERS
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**Ref:** 2077_252217 **Date:** 27 September – 1 October 2027 **Location:** Paris **Fees:** 5700 Euro

## Overview

Smart Manufacturing and Industry 4.0 Training Course is a one-week practical course for manufacturing managers, industrial engineers, production leaders, automation specialists, maintenance and quality professionals, and transformation teams. Participants build a Smart Factory Roadmap Pack connecting maturity assessment, business priorities, cyber-physical production, industrial IoT, OT/IT integration, manufacturing data, MES and ERP interfaces, digital twins, analytics, cybersecurity, pilot design, KPIs, and scale-up. Agile Leaders Training Center develops governed factory transformation rather than isolated technology demonstrations.

## Who Should Attend

- Manufacturing and plant managers responsible for performance, investment, workforce, and transformation priorities
- Industrial and production engineers designing connected workflows and measurable improvement use cases
- Automation, controls, OT, IT, MES, and enterprise-architecture personnel planning system integration
- Maintenance, reliability, quality, energy, and supply-chain professionals using manufacturing data
- Digital transformation, cybersecurity, data, analytics, and programme teams coordinating pilots and scale-up

Participants should understand basic production processes and factory systems. The course does not teach PLC programming, configure a specific vendor platform, build production AI models, or replace detailed cybersecurity engineering and functional-safety studies.

## Departments and Industries

The course supports discrete, batch, and continuous manufacturing environments pursuing connected and data-enabled operations.

- Automotive, aerospace, electronics, machinery, and industrial equipment manufacturing
- Food, beverage, pharmaceutical, chemical, metals, cement, and process industries
- Production, industrial engineering, automation, maintenance, quality, and operations excellence
- OT, IT, MES, ERP, data, cybersecurity, and enterprise architecture functions
- Strategy, capital projects, innovation, sustainability, and workforce-development teams

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## Learning Objectives

By the end of this course, participants will be able to:

- Assess smart-manufacturing maturity across process, technology, data, people, governance, and cybersecurity.
- Map physical production, sensors, controls, manufacturing operations, and enterprise systems using a reference architecture.
- Select IIoT, connectivity, MES, data-platform, digital-twin, analytics, and AI use cases tied to operational value.
- Define information ownership, interoperability, data-quality, cybersecurity, and lifecycle requirements.
- Prioritize a pilot through value, feasibility, risk, readiness, dependencies, and measurable success criteria.
- Build a phased Industry 4.0 roadmap with investment logic, workforce actions, KPIs, governance, and scale-up gates.

## Course Agenda

### Day 1: Assess Smart Manufacturing Readiness

- Industry 4.0 Value, Scope, and Connected-Factory Boundary
- Process, Technology, Data, People, Governance, and Security Maturity Model
- Current-State Production Flow and Digital Pain-Point Map
- Business Objective, Loss, Constraint, and Opportunity Register
- Smart Manufacturing Vision and Transformation Principles

### Day 2: Design the Connected Factory Architecture

- Physical Process, Sensor, Device, Control, Operations, and Enterprise Layers
- Industrial IoT Connectivity, Edge, Gateway, Network, and Platform Options
- MES, SCADA, Historian, QMS, CMMS, ERP, and Planning-System Boundaries
- OT/IT Integration and Manufacturing Information-Exchange Map
- Asset, Product, Process, Work, Quality, and Performance Data Ownership

### Day 3: Select Smart Manufacturing Use Cases

- Real-Time Visibility, OEE, Traceability, Quality, Energy, and Flow Use Cases
- Predictive Maintenance, Anomaly, Inspection, Scheduling, and Decision Support
- Digital Twin Purpose, Scope, Model, Data, Verification, and Lifecycle
- Use-Case Value, Feasibility, Data, Integration, Workforce, and Risk Screen
- Portfolio Prioritization and Dependency Map

## Day 4: Govern Data, Cybersecurity, and Change

- Manufacturing Data Quality, Context, Master Data, Lineage, and Access Controls
- OT Asset Inventory, Zones, Connections, Identity, Change, and Monitoring
- Cybersecurity Risk and Secure-by-Design Pilot Requirements
- Human-Machine Roles, Skills, Adoption, Work Design, and Operating Procedures
- Architecture, Data, Security, Safety, and Investment Decision Gates

## Day 5: Build and Scale the Roadmap

- Suggested Exercise: Complete a Smart Manufacturing Maturity Assessment
- Suggested Exercise: Map OT, MES, Data, and ERP Interfaces
- Suggested Exercise: Prioritize a Digital Twin or IIoT Use Case
- Suggested Exercise: Design a Pilot Charter and Benefits Measurement Plan
- Capstone Exercise: Present a Smart Factory Roadmap Pack

## Practical Exercises

The course uses suggested activities based on a factory process, systems landscape, loss profile, data constraints, and investment choices.

- Suggested activity: assess maturity, identify capability gaps, and connect digital opportunities to quality, delivery, cost, safety, energy, and resilience outcomes.
- Suggested activity: map sensors, controls, operations systems, enterprise applications, data exchanges, owners, and cybersecurity boundaries.
- Suggested activity: compare IIoT, digital-twin, analytics, and automation use cases using value, feasibility, risk, readiness, and dependency criteria.
- Suggested activity: define a pilot with baseline, target, scope, architecture, data, security, workforce, governance, acceptance, and scale-up gates.

## FAQs

### Who suits smart manufacturing and Industry 4.0 training?

Smart manufacturing and Industry 4.0 training suits plant, production, engineering, automation, maintenance, quality, OT, IT, data, cybersecurity, and transformation personnel planning connected-factory improvements.

### Does Industry 4.0 mean replacing every existing factory system?

No. A roadmap begins with business needs and the current systems landscape. It can retain, integrate, upgrade, isolate, or replace components according to value, risk, lifecycle, interoperability, and supportability.

## How should a smart-manufacturing pilot be selected?

A suitable pilot addresses a meaningful operational problem, has accessible and trustworthy data, manageable integration and cyber risk, committed users, measurable baseline and target, defined ownership, and a plausible path to scale.

## What makes a manufacturing digital twin trustworthy?

A trustworthy digital twin has a defined purpose and boundary, traceable source data, validated model behaviour, managed assumptions and uncertainty, controlled interfaces, cybersecurity protections, lifecycle ownership, and evidence that it supports its intended decision.

## Conclusion

Participants leave with a Smart Factory Roadmap Pack for their organization. It combines a maturity assessment, current-state map, reference architecture, use-case portfolio, data and cybersecurity controls, pilot charter, benefit model, workforce plan, KPIs, governance, and scale-up gates. The pack turns Industry 4.0 ambition into sequenced and reviewable manufacturing decisions.