



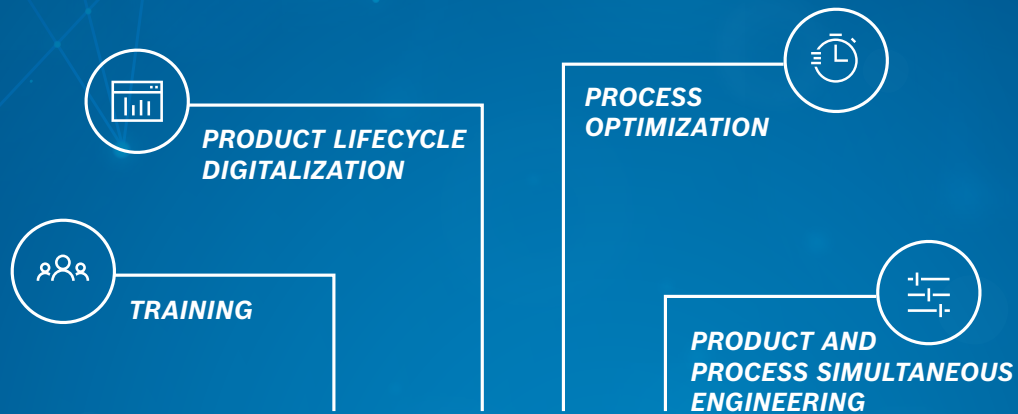
BOSCH INDUSTRY ACADEMY

BOSCH INDUSTRY
CONSULTING

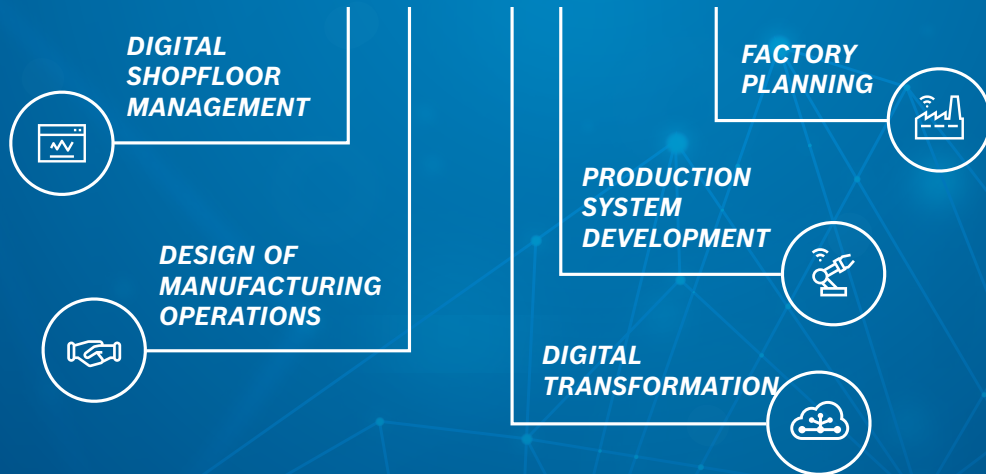


INDEX

- 04 | Bosch Industry Consulting
- 06 | Leadership in a Lean Factory
- 18 | Lean Manufacturing Tools
- 34 | Locations



INTELLIGENT VALUE STREAMS. YOUR FLEXIBLE TEAM OF EXPERTS.



BOSCH INDUSTRY CONSULTING

SEMINARS

Classroom training
Simulations

REAL CASES

Practical training on the shopfloor

PROJECTS

Lean Manufacturing
I4.0 Solutions
Design of workstations

DEVELOPING YOUR TEAM

We carry out training for different levels of knowledge and responsibility in your organization.

We offer a Lean Manufacturing qualification program based on roles and responsibilities of leadership.

Training can be carried out in a Bosch factory or in your company, being personalized depending on your needs and culture.

The trainings are essentially practical with an emphasis on approaching real cases on site.

Leadership in a Lean Factory

- 08** | The leader of a Lean factory
- 10** | Lean Digital – Interaction between Lean and I4.0
- 12** | Standardized work for production line leaders
- 14** | Standardized work for operators
- 16** | Daily shopfloor management



THE LEADER OF A LEAN FACTORY

GOAL

Develop skills in roles and responsibilities of leaders in managing a system of Lean production.

SCOPE

Introduction to the **Lean System Approach**;
Creation of **KPI (Key Performance Indicator)** trees;
Clarity of material and information flows;
Standardized work and process confirmation;
Pull and leveling production system in the value stream;
Roles and responsibilities in the improvement process;
A3 Methodology as a tool for managing change.

TARGET AUDIENCE

Directors, managers and team leaders, Lean coordinators as well as logistics and production planners.

AVAILABLE LANGUAGES

PT | ES | EN



DURATION | 24h



NUMBER OF PARTICIPANTS | 8-12



PRICE/PARTICIPANT | Price on request



LEAN DIGITAL – INTERACTION BETWEEN LEAN AND I4.0

GOAL

Understand and simulate a digitalized production system.

SCOPE

Explanation of the basic concepts and the interaction between Lean and I4.0;

Understanding the importance of digitalization in Lean processes (factory simulation game);

Verify the benefits of I4.0 in improving Lean production systems (standardized work instructions in multimedia format, monitoring of material flows by RFID, data analytics and the use of data analysis tools in Problem Solving);

Application of the simulation in three steps (push, pull, leveled pull).

TARGET AUDIENCE

Software engineers, logistics and production planners, managers and team leaders, supervisors, plant managers, Lean project managers and coordinators.

AVAILABLE LANGUAGES

PT | ES | EN

 **DURATION** | 8h

 **NUMBER OF PARTICIPANTS** | 8-15

 **PRICE/PARTICIPANT** | Price on request



STANDARDIZED WORK FOR PRODUCTION LINE LEADERS

| GOAL

Develop skills of Value Stream Analysis and daily management of the improvement process.

| SCOPE

Digitalization of production;

Understand the importance of standards in the value stream;

Process analysis of machine and operator cycle time on the shopfloor;

Process confirmation and quick reaction to deviations;

Calculation of customer tact time, planned cycle time and OEE losses, deviations and description of target conditions.

| TARGET AUDIENCE

Production and logistics supervisors as well as team leaders.

| AVAILABLE LANGUAGES

PT | ES

🕒 **DURATION** | 24h

👥 **NUMBER OF PARTICIPANTS** | 8-12

💶 **PRICE/PARTICIPANT** | Price on request



STANDARDIZED WORK FOR OPERATORS

| GOAL

Understand the importance of standards for sustainability of the Continuous Improvement Process.

| SCOPE

Definition of the concept of standards and practical examples of their importance;

Group dynamics to evaluate work results carried out with and without standards.

| TARGET AUDIENCE

Production and logistics operators as well as leaders.

| AVAILABLE LANGUAGES

PT | ES

🕒 **DURATION** | 4h

👥 **NUMBER OF PARTICIPANTS** | 8-15

💶 **PRICE/PARTICIPANT** | Price on request



DAILY SHOPFLOOR MANAGEMENT

GOALS

Understand the importance, benefits and methodology for daily shopfloor management;

Identify the main efficiency losses of processes and promote improvements by applying Problem Solving.

SCOPE

Know and apply the 5 elements of daily shopfloor management (cycle time diagram, count hourly, OEE monitoring, identification of major losses and structured Problem Solving);

Definition of roles and responsibilities in the use of the methodology.

TARGET AUDIENCE

Operations directors, logistics and production planners, team leaders, supervisors, Lean project managers and coordinators.

AVAILABLE LANGUAGES

PT | ES

 **DURATION** | 16h

 **NUMBER OF PARTICIPANTS** | 12-16

 **PRICE/PARTICIPANT** | Price on request

Lean Manufacturing Tools

20 | Lean Manufacturing basic concepts and tools

22 | Value stream planning (VSM/VSD)

24 | Pull production system (Pull & Leveling)

26 | Standardized work for production lines

28 | Flow-oriented layout

30 | Quick changeover

32 | Machines and equipment specification



BASIC CONCEPTS AND TOOLS OF LEAN MANUFACTURING

GOAL

Understand the basic concepts and principles of Lean Manufacturing.

SCOPE

Definition of Lean Manufacturing concepts;
Importance of standards in the value stream;
Value Stream Mapping;
Design of the future state;
Understand the pull production system (Pull System);
Implementation of the Continuous Improvement Process.

TARGET AUDIENCE

Logistics and production directors and planners, team leaders, supervisors, Lean project managers and coordinators.

AVAILABLE LANGUAGES

PT | ES | EN

 **DURATION** | 16h

 **NUMBER OF PARTICIPANTS** | 8-12

 **PRICE/PARTICIPANT** | Price on request



VALUE STREAM PLANNING (VSM/VSD)

| GOAL

Design of the production system represented by materials and information flows, in a practical and succinct way, incentivizing improvement cycles.

| SCOPE

Presentation of the Value Stream Mapping symbology;
Determination of the customer's tact time (TT);
Data collection and design of the current state (VSM) – practical case;
Design of the future state (VSD) – practical case;
Identification of potential projects to improve Value Stream performance.

| TARGET AUDIENCE

Logistics and production directors and planners, team leaders, supervisors, Lean project managers and coordinators.

| AVAILABLE LANGUAGES

PT | ES | EN



DURATION | 16h



NUMBER OF PARTICIPANTS | 8-12



PRICE/PARTICIPANT | Price on request



PULL PRODUCTION SYSTEM (PULL & LEVELING)

GOAL

Design and implement functionalities and elements of control systems of consumption and production leveling (pull system & leveling).

SCOPE

Develop standards: supermarket, milkrun, kanban (use of the standard formula);

Analysis of typical deviations in relation to standards implemented;

Participate in simulations and case studies to improve understanding of system functionality.

TARGET AUDIENCE

Logistics and production directors and planners, team leaders, supervisors, Lean project managers and coordinators.

AVAILABLE LANGUAGES

PT | ES

 **DURATION** | 24h

 **NUMBER OF PARTICIPANTS** | 10-16

 **PRICE/PARTICIPANT** | Price on request



STANDARDIZED WORK FOR PRODUCTION LINES

GOAL

Balancing work content for operators and line suppliers.

SCOPE

Understand the method of developing variants of standardized work;

Learn to calculate the number of operators needed per production line;

Difference between customer tact time and cycle time.

TARGET AUDIENCE

Logistics and production directors and planners, team leaders, supervisors, Lean project managers and coordinators.

AVAILABLE LANGUAGES

PT | ES

 **DURATION** | 16h

 **NUMBER OF PARTICIPANTS** | 8-12

 **PRICE/PARTICIPANT** | Price on request



FLOW-ORIENTED LAYOUT

GOALS

Know the methodology for defining new production layouts and optimization of current ones;

Layout design for a continuous flow and reduction of material movement distances.

SCOPE

Understand the methodology for defining possible layout variants;

Use of qualitative and quantitative analyses as tools to define the best layout option;

Planning logistics areas as an integral part of the new layout development;

Real case study to consolidate the knowledge of the main steps in the application of the method.

TARGET AUDIENCE

Logistics and production directors and planners, team leaders, supervisors, Lean project managers and coordinators.

AVAILABLE LANGUAGES

PT | ES

 **DURATION** | 16h

 **NUMBER OF PARTICIPANTS** | 8-12

 **PRICE/PARTICIPANT** | Price on request



QUICK CHANGEOVER

| GOAL

Understand the method for optimizing changeovers so that they can be carried out safely, ergonomically and in the shortest possible time.

| SCOPE

Definition of the concept of quick changeover;

Learn how to implement the 5 steps to reduce changeover time.

| TARGET AUDIENCE

Production directors and planners, production engineers, machine preparers, team leaders, supervisors, Lean project managers and coordinators.

| AVAILABLE LANGUAGES

PT | ES

⌚ **DURATION** | 8h

👥 **NUMBER OF PARTICIPANTS** | 8-12

€ **PRICE/PARTICIPANT** | Price on request



MACHINE AND EQUIPMENT SPECIFICATION

GOALS

Understand the specification and purchasing process of machines and equipment;

Use appropriate terms to prepare specifications;

Plan project stages and deadlines for development and acquisition of new equipment;

Design equipment for the integration into MES (Manufacturing Execution System).

SCOPE

Introduction to the process of purchasing machines and equipment, from planning to acquisition;

Specification and definition of criteria for approval of equipment;

Introduction to the elements that make up the MES and the IT architecture;

Adequacy of industrial equipment specification for the integration into MES.

TARGET AUDIENCE

Industrialization and process engineers, process planners, industrial equipment buyers, Lean project managers and coordinators.

AVAILABLE LANGUAGES

PT | ES

 **DURATION** | 16h

 **NUMBER OF PARTICIPANTS** | 6-14

 **PRICE/PARTICIPANT** | Price on request

LOCATIONS



AVEIRO

GPS 40.669917, -8.612288



LISBOA

GPS 38.770095, -9.105129



BRAGA

GPS 41.530728, -8.430030



OVAR

GPS 40.892321, -8.615820



MADRID

GPS 40.434964, -3.635344

YOUR FLEXIBLE TEAM FOR SUCCESS.

**WOULD YOU LIKE TO GET MORE
INFORMATION ABOUT OUR SERVICES?**



bosch-industry-consulting.com



[bosch-industry-consulting-portugal](https://bosch-industry-consulting-portugal.com)



industry.consulting_iberia@bosch.com