Automated Warehousing and Smart Material Handling Training Course

30 Nov - 04 Dec 2026

Düsseldorf

5900 € (Per Person)

Ref: #LOG5182_151139

Course Introduction / Overview:

The global supply chain is undergoing a radical transformation, driven by the urgent need for greater speed, accuracy, and efficiency. This shift has placed automated warehousing and smart material handling at the core of modern logistics and operations management. This intensive training course is designed to provide a comprehensive exploration of the principles, technologies, and strategies that define the contemporary automated warehouse. As detailed by logistics expert Edward Frazelle in his seminal work, "World-Class Warehousing and Material Handling," the integration of technology is no longer a luxury but a competitive necessity. This program, offered by BIG BEN Training Center, moves beyond theoretical concepts to deliver practical, actionable knowledge. Participants will delve into the mechanics of Automated Storage and Retrieval Systems (AS/RS), the role of Autonomous Mobile Robots (AMRs), and the integration of Warehouse Management Systems (WMS) that orchestrate these complex operations. We will examine how data analytics, IoT, and AI are revolutionizing inventory control, order fulfillment, and overall warehouse productivity, preparing professionals to lead automation projects and optimize material flow within their organizations. This course is the definitive guide for mastering the transition from traditional warehousing to the smart, automated facilities of the future.

Target Audience / This training course is suitable for:

- Warehouse Managers and Supervisors.
- Supply Chain and Logistics Professionals.
- Operations Managers.
- Inventory Control Specialists.
- Industrial Engineers.
- IT Managers involved in WMS/WCS implementation.
- Procurement and Sourcing Managers.
- Distribution Center Managers.
- Facilities and Maintenance Managers.
- Project Managers overseeing automation initiatives.

Target Sectors and Industries:

- E-commerce and Retail.
- Third-Party Logistics (3PL) and Distribution.
- Manufacturing and Automotive.
- Pharmaceuticals and Healthcare.
- Food and Beverage.
- Aerospace and Defense.
- Consumer Packaged Goods (CPG).
- Government agencies and public sector logistics.
- Electronics and High-Tech.

Target Organizations Departments:

- Logistics and Supply Chain Management.
- Warehouse and Distribution Operations.
- Procurement and Sourcing.
- Operations Management.
- Information Technology (IT).
- Engineering and Maintenance.
- Inventory Management and Control.
- Strategic Planning and Development.

Course Offerings:

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

- Analyze and map material flow within a warehouse to identify automation opportunities.
- Evaluate different types of material handling equipment and automation technologies.
- Understand the functionalities of Warehouse Management Systems (WMS) and their integration.
- Develop a business case and calculate the Return on Investment (ROI) for automation projects.
- Design an efficient warehouse layout incorporating automated systems.
- Implement safety protocols and standards for an automated warehouse environment.
- Manage the key stages of an automation implementation project.
- Leverage data analytics for continuous improvement in warehouse operations.
- Assess the impact of emerging technologies like AI and IoT on logistics.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be immersive, practical, and highly interactive, ensuring that participants can translate theoretical knowledge into real-world capabilities. Our approach is centered on experiential learning, moving beyond traditional lectures to engage participants in a dynamic educational environment. The course will feature in-depth case studies of leading companies that have successfully implemented warehouse automation, allowing for a critical analysis of their strategies, challenges, and outcomes. Interactive workshops and group exercises will challenge participants to design warehouse layouts, calculate ROI for hypothetical automation projects, and develop implementation roadmaps. Facilitated group discussions will encourage the sharing of diverse industry experiences and collaborative problem-solving. The training incorporates video demonstrations of cutting-edge technologies like AS/RS and AMRs in action. Our expert instructors provide continuous feedback and facilitate a learning environment where questions are encouraged, ensuring that complex technical and strategic concepts are fully understood and can be confidently applied in the workplace.

Course Agenda (Course Units):

Unit One: Foundations of Modern Material Handling

- Introduction to Material Handling and Warehouse Operations.
- The Evolution from Manual to Automated Systems.
- Principles of Lean Warehousing and Waste Reduction.
- Analyzing Material Flow and Process Mapping.
- Key Performance Indicators (KPIs) for Warehouse Efficiency.
- The Business Case for Automation and Strategic Alignment.
- Health, Safety, and Ergonomics in Material Handling.

Unit Two: Core Automated Material Handling Technologies

- Automated Storage and Retrieval Systems (AS/RS).
- Conveyor and Sortation Systems Technology.
- Automated Guided Vehicles (AGVs) vs. Autonomous Mobile Robots (AMRs).
- Robotic Picking, Packing, and Palletizing Systems.
- Pick-to-Light, Put-to-Light, and Voice-Directed Picking.
- Automated Loading and Unloading Systems.
- Comparing Technologies for Different Operational Needs.

Unit Three: Warehouse Management and Information Systems

- The Role of a Warehouse Management System (WMS).
- Warehouse Control Systems (WCS) and Warehouse Execution Systems (WES).
- Integration of WMS with ERP and other Enterprise Systems.
- Radio Frequency Identification (RFID) and Barcoding Technologies.
- The Internet of Things (IoT) for Real-Time Asset Tracking.
- Data Analytics and Business Intelligence in Warehousing.
- Cybersecurity Considerations for Automated Systems.

Unit Four: Designing and Implementing an Automated Warehouse

- Project Management for Automation Initiatives.
- Needs Analysis and Requirements Gathering.
- System Design and Warehouse Layout Optimization.
- Vendor Selection and Technology Evaluation.
- Calculating Return on Investment (ROI) and Total Cost of Ownership (TCO).
- Managing the Implementation, Testing, and Go-Live Phases.
- Change Management and Workforce Training Strategies.

Unit Five: Operating and Optimizing the Automated Facility

- Daily Operations Management in an Automated Environment.
- Preventive and Predictive Maintenance for Automated Systems.
- Safety Standards and Risk Management with Robotics.
- Strategies for Continuous Improvement and Optimization.
- The Future of Warehousing: AI, Machine Learning, and Predictive Analytics.
- Sustainability in Automated Warehousing Operations.
- Preparing for Scalability and Future Growth.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

As automation and AI become more prevalent in warehousing, what is the evolving role of the human workforce, and how can companies best manage the transition to a collaborative human-robot environment?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by offering a holistic and strategic perspective on warehouse automation, moving beyond a simple technical overview of equipment. While other programs may focus narrowly on specific technologies, this curriculum integrates the technological, operational, and financial aspects into a cohesive framework. It emphasizes the critical thinking required to not just select technology, but to build a comprehensive business case, calculate a realistic ROI, and manage the complex project of implementation. A key differentiator is our focus on the integration of systems, particularly how WMS, WCS, and WES function as the brain of the automated facility, a topic often undertreated elsewhere. Furthermore, the course content is deeply practical, using real-world case studies and interactive workshops that simulate the decision-making challenges managers face. We address the human element of automation through dedicated sessions on change management and workforce adaptation, preparing leaders to manage not just machines, but the people who work alongside them. This blend of strategic planning, technological depth, and operational management provides a uniquely comprehensive and actionable learning experience.