WAREHOUSE OPERATIONS & LAYOUT DESIGN EXCELLENCE



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Introduction

Layout decides how far every item travels, how many times it is handled, and how quickly an order leaves the dock. A poor plan cannot be fixed by harder work; it adds cost to every single movement, all day, every day. This Warehouse Operations & Layout Design Excellence Training Course gives warehouse managers, industrial engineers, and logistics professionals a complete method to design and run warehouse operations well. Participants learn to choose flow patterns, zone the facility, configure racking and aisles, slot items by velocity, and design picking and dispatch processes around real order profiles. Furthermore, the course covers capacity planning, layout revision, lean flow, and the measurements that confirm a design is delivering.

Warehouse Operations & Layout Design Excellence Course Objectives

- Map material and order flow and identify travel, handling, and waiting waste.
- Select flow patterns: U-flow, I-flow, and through-flow for different building shapes.
- Zone the facility for receiving, bulk storage, pick face, packing, dispatch, and returns.
- Configure racking, aisle widths, and vertical space for the product profile.
- Apply velocity, cube, weight, and affinity rules in slotting decisions.
- Design pick paths, pick-face sizing, and replenishment to the pick face.
- Plan capacity, throughput, and space needs with growth and seasonality.
- Design dock, staging, and dispatch areas for vehicle turnaround and cut-off control.
- Apply lean layout principles: 5S, standard work, and value stream mapping.
- Measure layout performance using travel distance, lines per hour, and cost per order.

Course Methodology

- Facilitated sessions built on real building drawings and order profile data.

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- Flow mapping and travel distance analysis exercises.
- Slotting and pick-face sizing workshops using item movement history.
- Layout redesign exercise with before-and-after performance comparison.
- Group work on a layout and operations improvement plan with measured targets.

Who Should Take This Course

- Warehouse and distribution centre managers.
- Industrial and logistics engineers.
- Warehouse supervisors and operations team leaders.
- Continuous improvement and process design officers.
- Facilities and layout planning staff.
- Supply chain professionals involved in new facility projects.

Warehouse Operations & Layout Design Excellence Course Outlines

Day 1: Flow Analysis and Layout Principles

- Material flow mapping from receiving to dispatch.
- Travel, handling, and waiting waste and their cost.
- Flow types: U-flow, I-flow, and through-flow compared.
- Building constraints: shape, columns, height, and docking points.
- Zones: receiving, bulk storage, pick face, packing, dispatch, and returns.
- Spaghetti diagrams and travel distance measurement.
- Layout principles for flexibility and future change.

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Day 2: Storage Systems, Racking, and Aisle Design

- Rack types: selective, drive-in, double deep, cantilever, and flow racking.
- Pallet, carton, and piece-pick storage media selection.
- Aisle width calculation and equipment turning requirements.
- Vertical space use, mezzanines, and multi-tier pick modules.
- Cube utilisation and pallet footprint analysis.
- Small parts, hazardous goods, and special storage needs.
- Storage equipment cost and selection criteria.

Day 3: Slotting, Pick Face, and Replenishment Design

- Velocity-based slotting and fast-mover placement.
- Affinity and family grouping to group related picks.
- Golden zone design for ergonomic and high-frequency picking.
- Pick-face sizing based on demand rate and replenishment frequency.
- Replenishment design: trigger points and movement paths.
- Balancing pick faces across zones to level workload.
- Reslotting projects and measuring the gain.

Day 4: Picking, Packing, and Dispatch Layout

- Picking methods: discrete, zone, batch, wave, and cluster.
- Pick path design to reduce travel and backtracking.
- Packing bench layout, carton selection, and packing flow.
- Staging area design and space for outgoing loads.
- Dock layout, door allocation, and vehicle turnaround.

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- Cut-off times, wave planning, and load consolidation.
- Returns and reverse logistics area design.

Day 5: Capacity, Lean Flow, and Performance Measurement

- Capacity and throughput calculation for the facility.
- Peak planning, seasonal flexing, and temporary layouts.
- 5S and visual management of floor space.
- Standard work and value stream mapping in storage operations.
- Layout KPIs: travel distance, lines per hour, dock-to-stock, cost per order.
- Simulation and modelling tools for layout decisions.
- Building a layout revision and improvement roadmap.

Conclusion

By successfully completing the Warehouse Operations & Layout Design Excellence Training Course, participants will have acquired a thorough working knowledge of flow analysis, zoning, racking and aisle design, slotting and pick-face sizing, picking and dispatch layout, capacity planning, lean flow, and layout performance measurement. They will leave able to design a warehouse layout around real order data, cut travel and handling waste, and prove the gain with hard numbers. Gentex Training Center delivers this programme with warehouse and engineering practitioners who design and run these facilities in live operations.

LEARN BOLD. **LEAD BEYOND**
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FAQs for the Warehouse Operations & Layout Design Excellence course

Q1 What is the "Warehouse Operations & Layout Design Excellence" course about?

It is a five-day programme on designing and running warehouse operations. It covers flow analysis, zoning, racking and aisle design, slotting and pick-face sizing, picking and dispatch layout, capacity planning, lean flow, and layout performance measurement.

Q2 What are the key benefits of the "Warehouse Operations & Layout Design Excellence" course?

Participants cut travel distance and double handling, which lowers cost per order and raises lines per hour without new equipment. They also gain capacity visibility for peak seasons and a design that can absorb growth rather than block it.

Q3 What skills will I gain from the "Warehouse Operations & Layout Design Excellence" course?

You will gain material flow analysis and zoning design, racking and aisle configuration planning, slotting and pick-face sizing with replenishment design, and picking, packing, and dispatch layout design with performance measurement.

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Q4 What tools, methods, or standards are covered in the "Warehouse Operations & Layout Design Excellence" course?

The course works with material flow mapping and spaghetti diagrams for travel analysis, U-flow, I-flow, and through-flow layout models, rack types including selective, drive-in, double deep and flow racking, aisle width and equipment turning calculations, cube utilisation and pallet footprint analysis, velocity-based slotting with affinity grouping, golden zone design, pick-face sizing and replenishment trigger design, discrete, zone, batch, wave and cluster picking methods, dock and staging layout design, 5S and value stream mapping, and layout KPIs including travel distance, lines per hour, and cost per order.

Q5 How is the "Warehouse Operations & Layout Design Excellence" course applied in real-world practice?

Teams apply it when designing a new facility, redesigning an existing storage zone, reslotting fast movers closer to dispatch, sizing a pick face, reconfiguring dock doors, and planning a peak season temporary layout. It also guides racking investment decisions and layout simulation studies.