

Certificate in Warehouse and Distribution Center Layout

A well-planned warehouse layout will help you reduce operating costs by improving warehouse processes and inventory control. This self-paced, online certificate program was developed by the professional engineers and consultants at Richard Muther & Associates, internationally recognized for their contributions to industrial facilities planning. All techniques presented are field-proven and derived from successful implementations. Case exercises are adapted from real situations and projects.

- This course delivers comprehensive, hands-on training in *Systematic Layout Planning (SLP)* – the world’s most structured approach to layout and facilities planning.
- In addition to lectures, you will learn by doing, with over 100 pages of worksheets and case exercises. Guided by a leading authority on warehouse/DC layout, you will practice diagramming and quantifying material flow. You will learn how to chart and diagram all the closeness relationships in your layouts.
- In addition to layout planning, we will cover site location and selection as well as relocation and installation – everything you need to plan and manage a successful project from start to finish.
- A dozen case problems adapted from actual projects and situations will assure your ability to apply what you have learned. Each session includes a short self-test with page numbers where answers will be found.

Here’s a partial list of the many specific things you will learn:

1. Four phases and three fundamentals of every planning project.
2. Five key inputs that you must have to make great plans.
3. A simple six-step method for planning small facilities and areas.
4. Four classical ways to lay out a storage facility – and the conditions favoring each.
5. Five critical decisions (and 17 options) when planning your order-picking methods.
6. Nine conditions that favor external, goods-to-person picking.
7. Five conditions that favor automatic picking machines; and 6 that favor robotics.
8. Eight factors to compare when selecting order-picking equipment.
9. Ten intangible considerations when choosing an order-picking method.
10. A dozen factors to consider when selecting your storage and material handling methods.
11. A dozen conditions that favor automated or mechanized storage and handling.
12. Fifteen-factors that will group your materials for effective layout, storage and handling.
13. Two proven ways to chart material moves.
14. Twelve reasons for closeness other than flow of materials.

15. Five ways to determine space requirements – short and long-term.
16. Three attributes of space – and why you need all three to get a good layout.
17. Four basic flow patterns and the benefits of each.
18. A dozen conditions that may favor combining or separating receiving and shipping
19. The considerations that govern storage aisle length; main aisle and tunnel placement.
20. How to get 3 or more good layouts in the time you normally get just one.
21. How to measure and compare material handling effort.
22. How to involve others and get their buy-in, without bogging down.
23. How to get quicker consensus and earlier approval of your layout plans.
24. A proven procedure for scoring alternative layouts for comparison to their costs.
25. How to plan for storage rack rearrangements and relocations.
26. How to document your rack plans for subsequent procurement and installation.
27. Nineteen activities to consider when planning your Receiving operation.
28. Seventeen activities to consider when planning your Shipping operation.
29. Seven ways to save space in Receiving – and 7 more to save space in Shipping.
30. Seven economic factors to analyze when relocating or locating a new facility.
31. A 9-step location planning procedure.
32. A proven method for rating and selecting locations and sites.
33. The four phases of site location and selection.
34. Thirty factors to consider when searching for a new location and site.
35. Ten questions your management wants answered before approving your plans.

In addition to instructional videos with detailed notes, you will also receive:

- Supplemental readings on: AS/RS, AGVs, conveyors, sortation, truck docks.
- A 60-item outline for specifying automated storage & retrieval systems.
- Supplemental reading on supply chain network modeling.
- A Warehouse Move Checklist with 130 tasks already loaded into Excel.
- Seventeen useful working forms ready-to-use in Excel.
- An 80-item checklist for saving storage space.

About Your Instructor

Lee Hales, President of Richard Muther & Associates, is an internationally-recognized planner of manufacturing and distribution facilities. Formerly operations manager for a distributor of industrial supplies and service parts, Mr. Hales has assisted on a wide range of projects on six continents. His clients include: Fastenal, Delta Air Lines, Textron, General Motors, Ford, Delphi Automotive, Caterpillar, Deere & Company, Raytheon, Coca-Cola, The Clorox Company, The Container Store, Pepsi-Cola, Glaxo, Unilever, Amazon and many others. The author of several books on facilities planning, Mr. Hales is a past director of the Facilities Planning and Design Division of the Institute of Industrial Engineers, and has served on the College-Industry Council on Material Handling Education. He is a member of the Warehousing Education & Research Council, the Council of Supply Chain Management Professionals, and a Senior Lecturer in the Georgia Tech Supply Chain & Logistics Institute. Mr. Hales holds degrees from the University of Kansas and the Massachusetts Institute of Technology.

Course Delivery

This online class will be delivered using the University of Kansas online learning management system. Each lesson has video recordings and PDFs for notetaking. Most lessons are followed by a short quiz. There are also layout exercises through which the instructor will guide you. Each exercise is followed by copies of the instructor's answers.

The instructor can be directly contacted via email with any questions about class content. He will respond within 2 business days.

Upon registering, you have up to four months to complete upon accessing the course in Canvas.

Certificate Requirements

The certificate is awarded after completion of all quizzes. Participants must attain a minimum of 75 percent for the entire course. The full certificate course is equal to approximately 24 classroom hours of instruction and assessment. The certificate will state that the recipient has earned 2.4 Continuing Education Units (CEUs) or 24 Professional Development Hours (PDHs). However, the course does not carry any college credits and cannot be used as part of a degree seeking program.

Refund and Cancellation Policy

No refunds will be granted for this class once the student has accessed the Canvas class site. A full refund of registration fees, less a \$30 administrative fee, will be approved if requested in writing at jayhawkglobal@ku.edu prior to accessing the course. Requests must be made within 60 days of payment.