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Lean Certification Program

Description:

Curriculum: LEA04

The Lean Manufacturing Certificate program will assist manufacturers with the challenge of implementing Lean and maintaining continuous improvements. This proven method is a series of eight course modules designed to provide participants targeted technical competencies in lean manufacturing.

Our lean experts will guide you through a series of course work, hands-on projects and simulations. You will learn how to apply each of the principles and tools of lean including Value Stream Mapping, Continuous Flow Manufacturing Cells, Lean Production Control, Level Pull Production, kanban and pull systems, and Kaizen Events and tools. Certification requires the completion of a lean manufacturing project in your own company – to reinforce the learning and achieve real results in your specific environment.

Program Outline:

LEA01	Implementing Lean Manufacturing
VSM01	Value Stream Mapping
LEA07	Lean Office: Value Stream Mapping for Business Processes
KAI01	Kaizen Events: 5S, Visual Controls, and Mistake Proofing
KAI02	Quick Changeover and Total Productive Maintenance (TPM)
FLOW01	Creating Continuous Flow Manufacturing Cells
LPC01	Lean Production Control and Inventory Management
PRJ01	Student In-House Lean Project

Our on-site lean certification programs can be customized to suit the particular needs of the client. We can emphasize, modify, or add modules to ensure that all needed principles and tools are taught in the most applicable way.

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Introduction to Lean Implementation

Description:

Course: LEA01

In this interactive learning experience, participants will learn a specific sequence of steps and initiatives comprising a lean manufacturing action plan that real managers in real companies can deploy.

Whether you have implemented some lean initiatives and want more from your program or you are not sure where to begin, this program will enable you to devise a lean manufacturing strategy and action plan for your organization.

Audience:

This course is designed for senior level operations/manufacturing executives, manufacturing and plant managers, production control managers and supervisors, materials managers and analysts, manufacturing and industrial engineers, industrial managers, operations engineers, purchasing personnel, and anyone involved in the changeover to a lean operation.

Outline

- Lean Manufacturing Overview / Benefits
- 7 Wastes
- Implementation Tools: Value Stream Mapping and Kaizen Events
- Operational Stability
- Connecting Flow Through Continuous Flow and Pull
- Standardized Work
- Leveling
- Problem Solving Culture and Methodology / PDCA
- Extending Lean to Suppliers
- Lean Implementation: Strategy and Tactics
- Lean Implementation: Culture and Metrics

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Value Stream Mapping

Description:

Course: VSM01

Value Stream Mapping is a powerful tool for analyzing information and material flow throughout an organization or between organizations and identifying and planning improvements.

In this course, you will learn how to effectively identify and eliminate waste and sources of waste in your organization. Participants in the class will work through a case example. They will create a current state map, analyze the current state map, and create a lean future state. Participants will also be able to ask about their unique situations and learn different ways to apply this powerful tool.

Audience:

This course is designed for manufacturing and plant managers, production control managers and supervisors, materials managers and analysts, manufacturing and industrial engineers, industrial managers, operations engineers, purchasing personnel, and anyone involved in the changeover to a lean operation.

Benefits of Mapping

- The ability to dramatically reduce inventory and improve lead-time.
- Planning and identifying kaizen events for optimum effectiveness.
- The ability for participants from different parts of an organization to gain an understanding of the overall information and material flow.

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Value Stream Mapping (Cont.)

Outline:

- Lean and VSM Overview and Definitions
- Types of Kaizen
- Value Stream Identification
- Types of Value Stream Mapping
- Current State Analysis/Mapping
- Class Exercise: Current State
- Creating a Lean Future State
 - Takt time
 - Build to stock or directly to shipping
 - Single-Piece flow v. Pull
 - Scheduling
 - Heijunka
- Mapping a lean future state
- Class Exercise: Future State
- Implementation Planning

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Lean Office: Value Stream Mapping for Administrative Processes

Description:

Course: LEA07

Business Processes – such as order entry, quoting, scheduling, design and engineering, purchasing and accounting – often eat up from 70% to 95% of the time that goes into the "order to cash" cycle time. In this course, participants will learn how to apply lean principles to such business processes. They will learn how to identify waste in an office environment, how to construct a current state value stream map, how to develop a lean future state value stream map, and how to implement the improvements.

Benefits of a Lean office include reduction of:

- Long lead times (waiting wastes)
- Inventory (queued-up work in your in-basket)
- Over-processing (excess paperwork, redundant approvals)
- Motion (inefficient work area design and layout)
- Defect/mistakes (incomplete/inaccurate information)
- Transportation and motion (complex tracking systems)

Outline:

- Lean/Value Stream Mapping Overview
- The Seven Types of Waste for Administrative Processes
- Current Condition Analysis: Mapping Office Value Streams
- Designing a Current State Map
- Team Exercise: Current State Map
- Characteristics of Lean Administrative Processes
- Creating a Lean Future Condition
- Designing a Lean Future State Map.
- Team Exercise: Future State Map
- Planning and Implementing the Future State
- Process Kaizen Tools for the Lean Office

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Kaizen Events: 5S, Visual Controls, and Mistake Proofing

Description:

Course: KAI01

This course will teach the principles of process Kaizen. Process Kaizen events are highly focused continuous improvement activities that can be used to launch 5-S, TPM, Set-up Reduction/Quick Changeover, and/or Cellular Flow implementation projects. This course will teach you how to implement a kaizen activity and will focus on the process kaizen tools of 5S, visual controls, and mistake proofing (poka yoke).

Audience

This course is designed for manufacturing and plant managers, production control managers and supervisors, materials managers and analysts, manufacturing and industrial engineers, industrial managers, operations engineers, purchasing personnel, and anyone involved in the changeover to a lean operation.

Learning Objectives

Learn how to implement a kaizen event. Learn how to apply the tools of 5S, visual controls, and mistake proofing using kaizen.

Benefits

- Improved productivity
- Improved Quality
- Ability to elicit feedback from shop floor level employees (a valuable source of information)
- Improved employee morale
- Fast Implementation / High impact

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Kaizen Events: 5S, Visual Controls, and Mistake Proofing (Cont.)

Outline

- What is Process Kaizen?
- Selecting/Prioritizing Kaizen Events to Perform
- Planning a Kaizen Event
- Implementation
 - Training
 - Documenting Current Condition / Current State
 - Brainstorming
 - Creating Future Condition / Future State
 - Hands-on Implementation
 - Reporting and Follow-up
- 5S
 - Description of the 5 Pillars
 - Relationship Between 5S and Flow
 - Implementing Sort
 - Implementing Set in Order
 - Implementing Shine
 - Implementing Standardize
 - Implementing Sustain
- Visual Controls
 - Overview of Visual Factory
 - Elements of the Visual Factory
 - Waste Elimination: Case Examples
 - Benefits of the Visual Factory
 - How to Use Workplace Organization and Standardization: Five Keys to Workplace Organization
 - Overview of Visual Displays and Controls
- Mistake Proofing Techniques

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Kaizen Tools: Quick Changeover (SMED) and Total Productive Maintenance (TPM)

Description:

Course: KAI02

This course will teach the principles of Total Productive Maintenance and Quick Changeover (SMED). TPM and SMED are two essential ingredients in a lean manufacturing program. The TPM system addresses production operation with a solid, team-based proactive program. It helps eliminate losses from breakdowns, defects, and accidents and improves Overall Equipment Effectiveness (OEE). The SMED system for quick changeover is a three-phase system aimed at reducing changeover time on equipment; this allows for smaller batches and less inventory throughout the value stream.

Audience

This course is designed for manufacturing and plant managers, production control managers and supervisors, materials managers and analysts, manufacturing and industrial engineers, industrial managers, operations engineers, purchasing personnel, and anyone involved in the changeover to a lean operation.

Learning Objectives

Learn how to apply key process kaizen tools Total Productive Maintenance (TPM) and Quick Changeover (SMED) to improve equipment uptime and effectiveness and to reduce inventory and lead time.

Benefits

- Improved Productivity / Equipment Uptime
- Improved Quality
- Smaller Batches / Less Inventory
- Improved Ability to Respond to Customer Needs

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Kaizen Tools: Quick Changeover (SMED) and Total Productive Maintenance (Cont.)

Outline

- Overview: Process Kaizen Tools
- Total Productive Maintenance
 - Why TPM is Important
 - The Big Six Losses
 - Measuring and analyzing Overall Equipment Effectiveness (OEE).
 - Autonomous Maintenance/TPM Teams
 - Daily/Weekly Maintenance Tasks
 - TPM and 5S
 - Sustaining/Improving the Program
- SMED/Quick Changeover
 - Why are setup times important?
 - What is the SMED system?
 - Four stages of any setup
 - Analyzing current setups
 - Identifying Internal versus External Setup
 - Converting Internal versus External Setup
 - Streamlining External and Internal Setup steps
 - Setup reduction worksheet
 - Case Studies
 - Implementing the changes
 - Measuring the Improvement

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Creating Continuous Flow Manufacturing Cells

Description:

Course: FLOW01

Manufacturing cells have been in use in the U.S. for over 10 years; however, many companies still have found limited success in creating one-piece flow. In this workshop, participants will learn how to design manufacturing cells for true one-piece flow. The course is comprehensive in that it covers all facets of this discipline: understanding takt time, physical layout, analyzing standard work and creating standard work charts, line balancing, load-leveling, setting up a system for auditing, and more. Participants will work through two case examples. They will design cells and work through necessary calculations and analysis. Skills will be immediately applicable to the "real world."

Audience:

This course is designed for manufacturing and plant managers, production control managers and supervisors, materials managers and analysts, manufacturing and industrial engineers, industrial managers, operations engineers, purchasing personnel, and anyone involved in the changeover to a lean operation.

Benefits

- Less WIP inventory
- Increased operator productivity
- Shorter lead times
- Ability to better handle fluctuating demand

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Creating Continuous Flow Manufacturing Cells (Cont.)

Outline:

- Lean and Continuous Flow Overview/Definitions
- Benefits of continuous or single-piece flow
- Identifying and selecting product families
- Calculating takt time
- Exercise
- Metrics
- Identifying and recording work steps
- Exercise
- Operator Balancing
- Layout Guidelines
- Equipment Requirements
- Exercise
- Material management
- Troubleshooting flow problems
- Implementation planning
- Work Distributions
- Scheduling/Hiejunka
- Sustaining
- One Piece Flow Simulation

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Lean Production Control and Inventory Management

Description:

Course :LPC01

This course will teach the implementation of a lean production control system in a factory. Learn when to hold finished goods and when to make-to-order; learn how to create and manage a finished goods supermarket; learn how to size supermarkets and trigger production; learn how to control batch processes upstream; and more.

The attendees will work through a case exercise and learn skills they can immediately apply to their workplaces.

Audience

This course is designed for manufacturing and plant managers, production control managers and supervisors, materials managers and analysts, manufacturing and industrial engineers, industrial managers, operations engineers, purchasing personnel, and anyone involved in the changeover to a lean operation.

Benefits

- Higher plant inventory turns
- Less WIP and Finished Goods inventory
- Fewer parts shortages
- Improved on-time delivery to customers
- Higher production output
- Less overtime
- Less expedited production

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Lean Production Control and Inventory Management (Cont.)

Outline

- The benefits of a lean production control system
- Finished Goods Warehouses v. Make-to-Order Operations
- Exercise
- How to Organize and control a finished goods warehouse
- Exercise
- How to schedule a value stream
- Exercise
- How to level production (heijunka)
- How to convey demand to the pacemaker to create pull
- How to Manage upstream Information and Material Flow
- How to size supermarkets
- Exercise
- How to setup and use Kanban systems
- How to control upstream processes
- Exercise
- How to expand your production control system
- Sustaining and Improving

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