



Lean Manufacturing Principles

Overview: Provide class participants with the skill sets needed to support a lean implementation. Ideally, the training is done in a cross-functional team environment.

Audience: All team members (supervision and engineering through to operators as well as non-manufacturing personnel). Cross-functional representation is preferred.

Course Outline:

- Module 1 –Lean Manufacturing Overview
 - Lean defined (What it is and is not)
 - A brief history of Lean (From Henry Ford at the turn of the century to Toyota today)
 - Waste elimination process
- Module 2 –Process Mapping
 - Flow charting the process
 - Utilizing the SIPOC model (Supplier-Input-Process-Output-Customer)
 - Determining Value vs. Non-Value added
 - Process mapping (departmental flow)
 - Value Stream Mapping
- Module 3 –The Seven Wastes
 - De-constructing waste
 - Overproduction waste
 - Waiting waste
 - Transportation waste
 - Inventory waste
 - Motion waste
 - Defect waste
- Module 4 –Implementing 5S
 - The 5 S Philosophy
 - Seiri –Sort and Discard
 - Seiton –Organize and Arrange
 - Seiso –Clean, Tidy and Inspect
 - Seiketsu –Maintain the system
 - Shitsuke –Establishing the Belief and Culture
- Module 5 –Kaizen, Pokayoke and Visual Management
 - Kaizen philosophy of Continuous Improvement
 - Poka yoke process of Mistake Proofing
 - Visual Management (Line of sight, performance metrics visible, marking of area)
 - Andon lights (Green/Yellow/Red)
 - Use of silhouettes
 - Dashboards and metric performance
- Module 6 –Line Balancing and Cycle Time Reduction
 - Calculating Total Cycle Time
 - Determining Demand at Capacity
 - Identifying bottlenecks and idle time
 - Calculating takt time
 - Line balancing methods
- Issuance of Final Exam