

Lean companies substantially improve their products and services while at the same time reducing waste and corresponding costs. Successful implementation of a lean improves an organization's marketplace and financial performance.

Lean efforts are not limited to manufacturing; a lean mindset applies to any process. Lean techniques can be used to reduce waste and add value to processes in the office, in maintenance, and even in sales and R&D. In some cases, the impact of a lean approach in the office can be even more dramatic than in manufacturing processes.

## **Learning Objectives**

- To understand the basic concepts, tools and practices of Lean
- To learn tactical skills for implementing lean at specific process
- To be able to explain the lean concepts to the team
- To be able to apply lean principles to different process settings

## **Methodology**

- Videos
- Multimedia lecture
- Quiz, with correct answers and explanations for the wrong answers.
- Discussion forum for engaging in dialogue with other participants.

## **Course Content**

- Origin and Philosophy
  - Mass production vs Lean
  - Muda, Mura, Muri
  - Seven Types of Wastes
  - Value-added Activity
  - Lean Manufacturing House ◦ Lean thinking Model
- Operational Stability
  - Indicators of Stability
  - Strategies for stability

- Standards and Visual Control
- 5S, Red-tagging, Spaghetti diagram
- TPM, Six Big losses, quasi-problems
- Standard Work
  - Standardization - benefits, pre-requisites, people focus
  - 3 elements of standard work
  - Takt time, work sequence, in-process stock
  - Charts for standardized work - production capacity chart, standardized work combination table, standardized work analysis chart, job element sheet
  - Individual and overall efficiency, manpower reduction
  - kaizen and layouts
- Just-in-Time
  - Little's law
  - Push system, large lot production
  - Pull system, basics of JITContinuous Process Flow, one piece flow
  - Push scheduling, Kanban, Pacemaker process,
  - Six Kanban Rules, types of kanbans
  - Conveyance, Hejunka, Changes in demand
  - Typesofpull-TypeA,BandC
- Jidoka
  - Autonomation
  - Zero-quality control
  - Types of Inspection - Judgment, Informative, Source, Vertical, horizontal
  - Three aspects of Poka yoke - Actions, Paths and Methods of detection
  - Andon
- Involvement
  - Goal involvement
  - Types of Kaizen teams - Kaizen Circle Activities, Practical Kaizen Training
  - Roles, Responsibilities of members, facilitators, managers etc.

- Kaizen Leadership
- Suggestion scheme - measurement, motivation
- Problem Solving

- A3

- Introduction

Problem Solving

- Problem Situation
- Target
- Theme
- Cause Analysis
- Countermeasures
- Implementation

- Value Stream Mapping

- Basic Concepts of VSM
- Documenting Production or Process Flow
- Adding Facts to the Map
- Capturing Travel Distances
- Capturing Communication Flow
- Creating Future State Map

- Single Minute Exchange of Dies (SMED)

- ■ History of SMED
- ■ Conceptual Stages
- ■ Steps for SMED
- ■ Practical Techniques

- Total Productive Maintenance (TPM)

- Understanding TPM
- Six Big Losses
- Autonomous Maintenance
- Education, Health and Safety
- Quality Improvement
  - 5s

- Poke yoke

- 5s and Andon systems

- TAKT time

- Inventory control
- Gemba walk
- JIT
- TQM