



# Introduction To Lean Six Sigma Processes



## Introduction:

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This popular course will provide you with a broad understanding of the Lean Six Sigma improvement methodology, concepts, and language. The course is targeted at team members who need to develop a general awareness of Lean Six Sigma: what it is, why it matters, what makes it successful.

## Who Should Attend?

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OE champions, Maintenance managers, engineers & planners, reliability and maintenance engineers, facilities and utilities managers, top level maintenance technicians, operations and production managers & engineers, plant engineers, design engineers, reliability engineers & technicians, operators, safety engineers, risk engineers, CMMS and spare parts personnel, safety engineers and anyone who is involved

## Course Objectives:

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By the end of this course delegates will be able to:

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- Understand how Lean Methods and Six Sigma are integrated
- Relate Lean Six Sigma concepts to the overall business mission and objectives
- Communicate using Lean Six Sigma concepts
- Think about your organization as a collection of processes, with inputs that determine the output
- Recognize the organizational factors that are necessary groundwork for a successful process improvement program
- Use the concept of a Sigma Level to evaluate the capability of a process or organization

## Course Outline:

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### Introduction to Lean

- Lean Principles
- Lean Concepts
- The Six Production Losses
- The 7 Wastes and Others
- The Seven Process Wastes
- Looking for 'Waste' in Processes
- Benefits of Lean
- Monitoring Operating Effectiveness
- Production Losses and Overall Equipment Effectiveness
- Just-in-Time vs. Work-in-Progress
- Work-in-Progress Batch Inventory

### The Critical Lean Concepts

- To Be Lean = Eliminate Non-Value
- Schedule to Match Takt Time
- Refine Your Value Adding Stream
- To Have Flow = Standardize & Level
- Benefit of Flow

- History of Value Stream Mapping
- The Value Stream Concept
- The Concept of Customer Value and Non-Value
- Discovering the Hidden Factory
- The Hidden Factory
- Another View of the 'Hidden Factory'
- Straighten the Workflow
- Total Productive Maintenance
- The Operators' Creed of TPM
- TPM Works by Reducing Risk of Failures
- Standards and Standardization
- Standardize the Work
- Developing Standardized Work
- 5S Creates a Visual Factory
- The 5S Cycle
- 5S Activities Explained

### Lean Process Example

- Process Investigation
- Collecting Data from the Process
- The Current State Map
- Example of Current State Map
- Spotting Productivity Improvements
- Visualize Productivity Improvements
- Future State Map
- Future State Map
- Implementation Plan
- VSM Process

### Introduction to Six Sigma

- What Six Sigma Means
- Defining What Good Performance
- Chance of Failure at Each Sigma Level
- Minimizing Variability
- What is Variation
- The Problems Start with Variation
- Causes of Variation

### **The Importance of Controlling Variation**

- Where Profit is Lost in Business Processes
- Defects Cause Failure
- Failures Misuse Time and Resources
- The Best are Proactive
- Defect Elimination and Failure Prevention
- Problems are Variations Caused by Defects
- Stop Defects and you Stop Problems
- Reducing Variation with a Quality Systems
- The Purpose of a Quality Management System
- Planned Efforts to Remove Variation
- Applying 6 Sigma for Improvement

### **Applying Six Sigma**

- Where Profit is Lost in Business Processes
- Why Organizations Lack Focus
- Roles in Six Sigma
- Six Sigma DMAIC process
- Six Sigma Project Life Cycle
- Problem Difficulty Distribution
- Defining Precision
- Human Error Rate

- Human Factors
- 12 Most Common Causes for Human Errors
- Apply Basic Statistical Control and Visual Management
- When Process Variability is Out-of-Control
- Process Quality Control Starts by Setting Outcome Limits
- Journey to 6 Sigma: Control Your Processes
- Move to 'Preventive' Quality Control
- 4 Pillars of Quality Management Systems

### Introducing Lean Six Sigma into Organizations

- Elements of a Good Management System
- What Are the Critical Success Factors?
- Start Measuring Plant Non-Performance
- Getting high task reliability needs quality
- Understanding what it means to be 'in control and capable'
- Accuracy Controlled Enterprise (ACE) Standard Operating Procedures Adds Statistical Process Control to Work Processes
- Remove variation, Accuracy Controlled Enterprise (ACE) Procedures
- The Accuracy Controlled Enterprise
- Accuracy Controlled SOPs Remove Variation with Proactive Statistical Process Control
- 7 Primary Quality Control Tools
- When to Apply the Quality Control Tools
- Pareto Chart the Problems for Focus