

Course No. 1633

Lean Six Sigma for Operational Excellence Training Course

INDUSTRIAL ENGINEERING & OPERATIONAL EXCELLENCE
INDUSTRIAL ENGINEERING, MAINTENANCE & OPERATIONS

DURATION

5 Days

DELIVERY

Classroom



Course Overview

The Lean Six Sigma for Operational Excellence Training Course is a professional development program designed to equip organizations and professionals with practical methodologies for improving process efficiency, reducing waste and variation, strengthening quality, and achieving sustainable operational performance. The course combines Lean principles with Six Sigma problem-solving methods to provide a structured approach to process improvement based on customer value, operational data, and measurable results.

Operational excellence requires more than isolated efficiency initiatives. It depends on the organization's ability to understand its processes, identify performance gaps, eliminate non-value-added activities, reduce process variation, solve recurring problems, and sustain improvements over time. This course provides participants with a practical framework for examining operational processes from end to end and identifying opportunities that can improve productivity, quality, service delivery, and resource utilization.

The Lean Six Sigma approach integrates the speed and waste-reduction focus of Lean with the analytical discipline of Six Sigma. Participants will explore process mapping, value stream analysis, waste identification, performance measurement, variation analysis, root cause analysis, improvement design, and process control. The program emphasizes the appropriate use of data to understand problems, validate causes, prioritize opportunities, and evaluate the effectiveness of improvement initiatives.

The Lean Six Sigma for Operational Excellence Training Course is suitable for government entities, ministries, public-sector organizations, banks and financial institutions, oil and gas companies, energy organizations, manufacturing operations, service organizations, and large corporations. It is designed to support executives, managers, process owners, specialists, and improvement teams seeking to establish a structured culture of continuous improvement and strengthen operational excellence across their organizations.

Objectives

- Analyze the fundamental principles of Lean and Six Sigma and their contribution to operational excellence and organizational performance during the course.
- Develop an integrated understanding of data-driven process improvement and structured

problem-solving methodologies.

- Evaluate existing processes to identify waste, variation, bottlenecks, defects, delays, and opportunities for improvement.
- Apply process mapping and value stream analysis techniques to identify non-value-added activities and improvement priorities.
- Analyze process data to identify sources of variation, defects, errors, delays, and recurring operational problems.
- Apply root cause analysis techniques to identify the underlying causes of process performance problems.
- Design practical improvement solutions based on verified causes, operational requirements, customer needs, and organizational priorities.
- Improve process efficiency by reducing waste, unnecessary activities, waiting time, rework, and process variation.
- Develop appropriate performance indicators for measuring process quality, efficiency, productivity, and improvement results.
- Strengthen the capability of cross-functional teams to structure and execute Lean Six Sigma improvement projects.
- Implement control and monitoring mechanisms to sustain improvement results and prevent performance deterioration.
- Develop a practical Lean Six Sigma improvement project for a selected workplace process by the end of the course.

Who Should Attend

The Lean Six Sigma for Operational Excellence Training Course is designed for managers, supervisors, engineers, analysts, and specialists responsible for process improvement, quality, productivity, operational performance, and organizational excellence. It is particularly relevant to Operations Managers, Production Managers, Quality Managers, Operational Excellence Managers, Continuous Improvement Managers, Industrial Engineers, Quality Engineers, Process Analysts, Performance Management Specialists, Quality Specialists, Project Managers, and improvement team leaders.

The course is also suitable for executives, department heads, process owners, transformation leaders, and professionals working across operations, supply chain, maintenance, engineering, customer service, finance, administration, and performance management. It is applicable to

government organizations, ministries, banks, financial institutions, oil and gas companies, energy organizations, manufacturing companies, logistics operations, service organizations, and large corporations. Decision makers can also benefit from the program by developing a stronger understanding of how Lean Six Sigma initiatives can support measurable operational and organizational priorities.

Learning Outcomes

- Explain the relationship between Lean, Six Sigma, operational excellence, and continuous improvement.
- Identify and prioritize suitable processes and problems for Lean Six Sigma improvement projects.
- Map operational and administrative processes to identify waste, bottlenecks, delays, and non-value-added activities.
- Analyze value streams to understand the movement of work, information, materials, and resources.
- Establish appropriate performance baselines for selected processes using relevant operational data.
- Identify process variation, defects, rework, delays, and other factors affecting performance.
- Apply structured root cause analysis techniques to investigate recurring operational problems.
- Use data and analytical evidence to distinguish root causes from symptoms and assumptions.
- Design practical process improvement solutions that address verified causes and operational requirements.
- Develop performance indicators to evaluate the impact and sustainability of improvement initiatives.
- Establish control mechanisms to maintain improved process performance after implementation.
- Prepare a structured Lean Six Sigma improvement project covering problem definition, measurement, analysis, improvement, and control.

Course Outline

DAY 01

Lean Six Sigma Foundations and Operational Excellence

- Understanding Lean Six Sigma and its role in operational excellence.
- Principles of Lean management and Six Sigma and how they complement each other.
- Linking process improvement with quality, productivity, efficiency, customer value, and organizational performance.
- Understanding customer value and translating requirements into process improvement priorities.
- Identifying waste and sources of operational inefficiency.
- Understanding the major categories of waste and their impact on cost, quality, and cycle time.
- Understanding process variation and its impact on process stability and performance.
- Selecting and prioritizing Lean Six Sigma improvement opportunities.
- Defining the roles of process owners, improvement teams, managers, and stakeholders.

PRACTICAL APPLICATION OR DISCUSSION

Assess a selected process, identify major performance problems, and determine key sources of waste and variation.

DAY 02

Problem Definition, Process Mapping, and Performance Measurement

- Defining the scope and boundaries of a Lean Six Sigma improvement project.
- Developing clear and measurable problem statements.
- Identifying customer and stakeholder requirements.
- Translating requirements into measurable process characteristics.
- Developing a structured improvement project charter.
- Identifying process owners, stakeholders, inputs, outputs, and critical process activities.
- Mapping processes and identifying decision points, handoffs, bottlenecks, and delays.
- Applying value stream mapping to understand the flow of work, information, and resources.

DAY 02 — CONTINUED

- Identifying value-added and non-value-added activities.
- Establishing process performance indicators and measurement baselines.
- Collecting and validating relevant process data.

PRACTICAL APPLICATION OR DISCUSSION

Develop a project charter, map a selected process, identify improvement opportunities, and establish appropriate performance measures and baseline data.

DAY 03

Data Analysis, Variation, and Root Cause Analysis

- Analyzing process performance and identifying performance gaps.
- Understanding process variation and its effect on quality and consistency.
- Analyzing defects, errors, rework, delays, downtime, and process deviations.
- Using structured problem-solving tools to identify patterns and relationships.
- Applying Pareto analysis to identify the most significant sources of problems.
- Using cause-and-effect analysis to categorize potential contributing factors.
- Applying the Five Whys technique to investigate underlying causes.
- Analyzing bottlenecks, delays, process interruptions, and sources of rework.
- Distinguishing symptoms, immediate causes, contributing factors, and root causes.
- Using evidence and process data to validate root causes before implementing solutions.

PRACTICAL APPLICATION OR DISCUSSION

Analyze operational problem data, identify major contributing factors, and validate the most significant root causes.

DAY 04

Process Improvement and Solution Design

- Converting analytical findings into practical improvement opportunities.
- Designing solutions based on verified root causes and process requirements.
- Simplifying processes and eliminating unnecessary activities.

DAY 04 — CONTINUED

- Improving workflow and reducing waiting time, unnecessary movement, handoffs, and delays.
- Reducing process defects, errors, and rework.
- Designing improvements to strengthen process quality, consistency, and stability.
- Testing and evaluating improvement solutions before wider implementation.
- Defining resources, responsibilities, timelines, and implementation requirements.
- Assessing the potential impact of improvement solutions on cost, quality, time, productivity, and service performance.
- Prioritizing improvement initiatives according to impact, feasibility, risk, and organizational relevance.
- Managing stakeholder involvement and supporting adoption of improved processes.

PRACTICAL APPLICATION OR DISCUSSION

Design an integrated improvement solution for a selected operational problem, including actions, resources, responsibilities, success measures, and expected performance improvements.

DAY 05

Control, Sustainability, and Lean Six Sigma Project Management

- Understanding the purpose of process control and its role in sustaining improvement.
- Developing control and monitoring plans for improved processes.
- Establishing post-improvement performance indicators and comparing results with baseline performance.
- Documenting and standardizing improved procedures and operating practices.
- Defining responsibilities, escalation mechanisms, and corrective actions for performance deviations.
- Conducting regular performance reviews to verify sustainability.
- Linking Lean Six Sigma projects with organizational performance indicators and strategic objectives.
- Managing improvement project portfolios and prioritizing initiatives according to organizational value.

DAY 05 — CONTINUED

- Building a culture of continuous improvement, structured problem solving, and data-driven decision making.
- Capturing lessons learned and sharing successful improvement practices across the organization.

FINAL WORKSHOP, ACTION PLAN, OR IMPLEMENTATION EXERCISE

Develop a complete Lean Six Sigma improvement project covering problem definition, project scope, baseline measurement, process analysis, root cause analysis, improvement solutions, performance indicators, control mechanisms, implementation responsibilities, and sustainability actions.

Register or Request More Information

Course page: <https://quest-training.com/courses/lean-six-sigma-for-operational-excellence-training-course>

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