## Session 1: Introduction to Lean Six Sigma (4.35 Hours)

- Introduction
- Higher Standards for Higher Performance
- Input Determines Output
- Lean Six Sigma Defined
- What's In a Name?
- The 5 Lean Principles
- The 8 Forms of Waste
- Success Stories
- The Sigma Level
- The 99.9% Problem
- DNA of a Champion
- Lean Six Sigma Framework
- DMAIC - The Improvement Process
- Lean and DMAIC
- Thought Process Mapping - Toolset
- Organizing for Success
- Working Relationships
- Introduction to EngineRoom®
- Exercises and Quiz

## Session 2: Define I – Starting A Project and Leading Teams (7.70 Hours)

- Getting Started – Project Initiation
- Project Selection Toolset
- Project Charter Toolset
- Project Planning & Tracking Toolset
- Leadership Thinking
- Robot Leadership
- Fueling The Improvement Engine
- Leadership Characteristics
- Practice, Study and Reflection - Learning by Modeling
- Leading Teams
- Developing an Effective Team
- Improving Team Development
- 4 Conversations Toolset
- Leading Change
- Leading Change – Continued
- Success Factors For Effective Change Management
- Leader Standard Work Toolset
- Stakeholder Analysis – RACI Matrix
- Leadership Reflection
- Exercises and Quiz

## Session 3: Define II – Voice of the Customer (6.55 Hours)

- Voice of The Customer
- Focus on The Customer
- Understanding Customer Requirements
- Where to Go For Customer Requirements
- Conducting Surveys
Session 3: Define II – Voice of the Customer (Continued)
  o Survey Considerations
  o Surveys – Sampling Frame
  o Structuring Survey Questions
  o The Degree of Uncertainty in Sampling
  o Guideline for Margin of Error
  o Affinity Diagram Toolset
  o CTQC Tree Diagram Toolset
  o Operational Definition Toolset
  o Voice Of The Customer As Specifications
  o Exercises and Quiz

Session 4: Define III – Mapping the Process (5.40 Hours)
  o Drawing a Process Picture
  o Process Thinking
  o The Source of Value
  o The Source of Value: Gemba
  o Process Mapping - Overview
  o Process Mapping (SIPOC) Toolset
  o Flow Charts
  o Value-Added Flow Charts
  o Spaghetti Charts
  o Takt Time
  o Value Stream Mapping Toolset
  o Define Tollgate – Progress Review
  o Exercises and Quiz

Session 5: Measure I – Measurements and Basic Statistics (6.00 Hours)
  o Measurements and Basic Statistics
  o Business Problem Solving
  o Basic Statistical Terms
  o Descriptive and Inferential Statistics
  o Measurements
  o Discrete vs. Continuous Measurements
  o Measurement Subjects
  o Graphical Summaries
  o Pareto Chart Toolset
  o Histogram Toolset
  o Understanding Variation
  o Measuring Central Tendency
  o Quantifying Process Variability
  o The Normal Distribution
  o Exercises and Quiz

Session 6: Measure II – Measurement System Analysis (8.80 Hours)
  o Measurement System Analysis – Introduction
  o Measurement as a Process
  o Cause & Effect Matrix Toolset
  o The Analysis of Measurement Systems
  o The Requirements of Measurement Systems
  o Variable MSA – Gage R & R
  o MSA Graphing
  o Attribute Measurement System Analysis
  o Calibration of Measurement Systems
  o Collecting Data
### Session 6: Measure II – Measurement System Analysis (Continued)

- Developing a Sampling Plan
- Baseline Performance
- Derivative Performance Metrics – Throughput Yield
- Derivative Performance Metrics – Rolled Throughput Yield
- Calculating the Sigma Level – Toolset
- The Sigma Level Revisited
- Exercises and Quiz

### Session 7: Measure III – Charting Process Behavior (9.20 Hours)

- Introduction – Charting Process Behavior
- Trend Chart Toolset
- SPC - Introduction and Background
- SPC - Introduction to Control Charts
- SPC - Control Chart Limits
- SPC - More On Control Limits
- Implementing SPC
- SPC Chart Selection
- Rational Subgrouping Toolset
- X and Moving Range Charts - Toolset
- Attribute Control Chart Toolset
- X-bar and R Chart Toolset
- Process Capability Toolset
- Measure Tollgate - Progress Review
- Exercises and Quiz

### Session 8: Analyze I – Identifying Potential Root Causes (10.15 Hours)

- Analyze I - Introduction
- Finding The Root Cause
- Cause & Effect Diagram Toolset
- Alternative To The Cause & Effect Diagram
- 5-Why, 1-How
- A Combination of 5-Why, Pareto, and Trend Charts
- Box Plots Toolset
- Scatter Plot Toolset
- Correlation and Regression Analysis
- Multiple Regression Toolset
- Binary Logistic Regression Toolset
- Factors In Determining Sample Size
- Estimating Population Mean
- Exercises and Quiz

### Session 9: Analyze II – Hypothesis Testing (11.90 Hours)

- Analyze II - Introduction
- Introduction to Hypothesis Testing
- The Process On Trial
- The Hypothesis - Accept or Reject?
- Types of Error
- Hypothesis Testing
- Confidence Intervals
- Treatment Comparisons – Control Charts
- Comparing Two Proportions Toolset
- Comparing Two Means – t-Test Toolset
- Comparing Multiple Means – ANOVA Toolset

© 2019 MoreSteam.com LLC. All rights reserved.
Session 9: Analyze II – Hypothesis Testing (Continued)
- Comparing Two Variances - F-test Toolset
- Hypothesis Testing Learning Lab
- Exercises and Quiz

Session 10: Analyze III – Design of Experiments (3.75 Hours)
- Design of Experiments - Introduction
- Design of Experiments - History
- Design of Experiments - Components
- Design of Experiments - Purpose
- Design of Experiments - Process
- Blocking
- Blocking and Tackling
- Analyze Tollgate - Progress Review
- Exercises and Quiz

Session 11: Improve (11.85 Hours)
- Improve
- Design for Six Sigma (DFSS)
- Benchmarking
- Brainstorming
- Narrowing Down The List of Ideas
- FMEA Toolset
- Error-proofing
- Prioritizing and Selecting a Solution
- The A3 One-Page Report
- Continuous Flow Toolset
- Leveling Production (Heijunks)
- Quick Changeover Toolset
- Cellular Processing Toolset
- Pull System Overview
- Pull Scheduling
- Core Process Pull Toolset
- Kaizen Toolset
- Corrective Action Matrix
- Piloting a Solution
- System Dynamics Toolset
- Improve Tollgate – Progress Review
- Exercises and Quiz

Session 12: Control (6.35 Hours)
- Control
- Control Charts Revisited
- The Process Control Plan
- More On FMEA
- Visual Management
- 5-S Approach
- Total Productive Maintenance
- TPM Objectives & Benefits
- TPM Metrics
- TPM Core Elements
- TPM Maintenance Activities
- Best Practices and Lessons Learned
- Standardized Work - Documenting Process Change
- Ending the Project
- Control Tollgate – Progress Review
- Exercises and Quiz
- Course Completion
- The Lean Six Sigma Journey

Updated on: 2/14/2019