

Lean Sigma Black Belt Workshop Details

Description

This unique training program provides the skill sets you will need to combine Lean concepts and Six Sigma into a coordinated Continual Improvement Quality effort. This course integrates Six Sigma tools and methods with the Lean tools. Project assignments between sessions require you to apply what you learn. During this program, you will be required to identify, define, and formally present one Black Belt project. Upon successful mastery of the Black Belt course material the student will earn a certificate of successful completion of the Black Belt course. The Black Belt project should be completed within one year. **Duration - 4 weeks.**

Goal

You will learn the advanced problem-solving skills including:

- Analysis of Variance (ANOVA)
 - One Way
 - Two Way
- Design of Experiment
- Regression
 - Simple
 - Binary Logistic
 - Multiple
 - Stepwise
- Monte Carlo Simulation and Optimization
- Voice of Customer analysis
- Graphical Analysis and more!

You will learn how to use these tools to measure a process, validate the measurement system, analyze the results, develop process improvements, and quantify the resulting savings. In addition, you will see how the practical tools and methods of Lean, including kanban, kaizen, 5S, Poka yoke, and value stream mapping can be incorporated into your Six Sigma efforts.

Outline / Topics

Week One: Define & Measure

- Six Sigma Overview of DMAIC
- Six Sigma & Lean
- The Hidden Factory
- Project Scoping and Selection
- Process Mapping / Value Stream Mapping
- Affinity Diagrams
- Quality Function Deployment
- Identifying process variables
- Measurement Systems Analysis
- Failure Mode and Effect Analysis
- Ishikawa Diagrams
- Introduction to Minitab

Week Two: Analyze

- Project Management
- Change Management
- Kaizen and Cycle Time Reduction
- Capability Analysis
- Verifying Cause and Effect Relationships
 - Graphical Analysis
 - Hypothesis Testing
- Project Updates
- Champion Review

Week Three: Improve

- Multiple Regression
- DOE including:
 - Full and Fractional Factorial Designs
 - Planning for DOE
 - Catapult Exercise
- Monte Carlo Simulation
- Kanban
- Value Stream Mapping
- Statistical Tolerancing
- Implementing Solutions

Week Four: Control

- Statistical Process Control
- Control Plans
- Risk Management
- Mistake Proofing
- 5 S / Visual Management
- Financial Impact
- Six Sigma Case Study Solution
- Lean Simulation
- Final Project Review
- Black Belt Certification Options

Results

Upon successful completion of the training, participants will:

1. Be able to use the comprehensive tools and methods of Six Sigma and Lean.
2. Have applied various Six Sigma and Lean concepts/tools to their individual Six Sigma DMAIC Projects.