QUICKSTART
Over 35 Years Of Technology Training

Document Generated: 12/18/2025

Learning Style: On Demand

Technology:

Difficulty: Beginner

Course Duration: 21 Hours

Lean Six Sigma Black Belt

The course content, which is aligned to ISQs BOK, will teach you how to improve services on time while eliminating defects. You will also learn to maintain consistency in delivery of products and services. This training will enhance your efficiency in process improvement initiatives and in achieving process and project excellence.

Course Outline:

LSSBB Overview

- About LSSBB
- Organizational roadblocks
- Black belt role in communication and selection criteria
- Overview of continuous improvement approaches
- Overview of lean
- Lean concepts
- Lean tools explained: 5S, Kaizen, SME, Heijunka, Genchi Gembutsu

Pre-define DMAIC and Define

Pre-define

- DMAIC vs DFSS
- Pre-define prerequisites and qualifications
- Project prioritization matrix
- Introduction to enterprise-wide view vs LOD view
- NPV and IRR

Define

- ChampionÃ¢Â€Â™s transfer of project
- Team dynamics and facilitation
- VOC / VOD / VOP
- CTQ, CTC, CTS
- VOC CTQ tree
- Translation of metrics
- Kano model
- Quality function deployment
- Y-Baseline performance
- Project charter
- Business metrics
- Rolled Throughput Yield (RTY)
- Statistical definition of Six Sigma
- Team member selection

Measure

- Pre-measure considerations and tools
- Types of data and measurement scales
- Central tendency and dispersion

- Measurement system analysis: Variables GAGE RR and Attribute RR
- Stability conditions
- Capability metrics (Cp, Cpk, Cpkm, Pp, Ppk)
- Variations, variability, and process conditions
- Data distribution (normal, binomial, poisson, exponential)
- Sigma shift, mean shift, and reducing variations
- Baseline data

Analyze

- Pre-analyze conditions
- Objectives of analyze
- Value stream analysis
- Sources of variation, cause and effect diagrams, and box plots
- Regression: simple linear, multiple linear, curvilinear, stepwise
- Confidence intervals
- Hypothesis testing: Parametric (f test, t test, z test) ANOVA (1 way and 2 way)
- Hypothesis testing: Non-parametric (Mann Whitney, Wilcoxon rank sign, Kruskal Wallis)
- Analysis of categorical data

Improve

- Pre-improve considerations
- Design of experiments: Theory
- Design of experiments: Practical
- Brainstorming for solutions, solutions prioritization, and cost benefit analysis
- Piloting, validating, and FMEA

Control

- Pre-control considerations
- Variables control charts and attribute control charts
- Measurement system analysis
- Control plan
- Document archiving and project closure
- Introduction to total productive maintenance