



Six Sigma “Green Belt to Black Belt” Fast Track Program

The content of this class assumes that all participants have recently completed GB training and that no remedial training is required. As such, essentially all material covered will be additional tools and methods that enhance data collection and analysis.

Who Should Attend: Participants who have completed Six Sigma Green Belt.

Prerequisite: Completed Six Sigma Green Belt.

CEU’s Credits: 8.0

Duration: 80 Hours – 10-day course

Course Content: Define Phase

Project Management (2 days)

This section provides the participant with an overview of project management techniques and tools that increase their effectiveness in leading and managing Six Sigma projects.

- Project management fundamentals
- Creating a work breakdown structure
- Creating an effective project plan
- Using Project Management software to increase efficiency
- Risk Analysis
- Resource Analysis
- Effective project management
- Communication management

Failure Mode and Effects Analysis (2 days)

- FMEA and Quality Systems
- Basic FMEA Concepts
- FMEA Teams
- Defining the Process
- Failure Modes

- Cause-Effect Diagram
- Controls
- Risk Analysis
- Using the FMEA Form
- Taking Action
- Keeping the FMEA Alive
- Control Plans
- Reaction Plans

Measure

No additional materials to be covered.

Analyze Phase

Applied Statistics (2-days)

- Comparing parallel processes
 - 2 sample t-test for means
 - f test for variances
 - z test for proportion
 - ANOVA
- Relating inputs to outputs
 - Correlation coefficient and the coefficient of determination
 - Regression
 - Simple regression
 - Multiple regression
 - Analysis of residuals
 - Testing for significance
 - Quadrant sum test
 - T-test for slope
 - ANOVA

Design of Experiments (4 days)

- DOE fundamentals
 - Terms
 - The DOE process
- Planning an experiment
 - Key considerations
 - Sequence of steps
 - Propriety of conduct
 - DOE checklists
- Full factorial designs
 - Two factor experiments (introduction to full factorials)
 - Understanding interactions
 - Understanding curvature
 - Calculating effects
 - Full factorial worksheets
- Judging the importance of signals
 - MSFE calculations

- Graphical techniques
- Judging significance for
 - Location
 - Spread – f statistic and transforming data
 - Proportion and counts – transforming data
- Model building
 - First order models
 - Second order models
 - Building the model
 - Analysis of residuals
- Fractional factorial designs
 - Confounding patterns
 - Analysis of fractional designs
 - Reflected designs
- Screening designs
 - Plackett and Burman designs
 - Taguchi designs
- DOE workshop

Improve

No additional materials to be covered.

Control

No additional materials to be covered

Each participant will receive a comprehensive manual and a Certificate of Completion at the close of the seminar.