

# Green Belt Course Content and Outline

## Introduction:

- What is Six Sigma? Input/Output (X and Y) Relationship
- Defects Per Million Opportunities Metric (DPMO)
- Success Stories
- Six Sigma History
- D-M-A-I-C Process
- Thought Process Mapping
- Six Sigma Organizational Structure
- Role of the Black Belt
- Six Sigma and Lean Enterprise
- Exercises and Quiz

## Define I - Prioritize:

- Process Thinking
- Process Mapping
- Flow Charts, Value-Added Flow Charts
- Pareto Chart
- Project Selection
- Project Charter
- Project Tracking - Gantt Chart
- Exercises and Quiz

## Define II - Voice of the Customer:

- Customer Satisfaction & Kano Model
- Sample Surveys
- Survey Construction
- Margin of Error
- Affinity Diagrams
- CTQC Tree Diagrams, Critical to Quality Characteristics (CTQC's)
- Setting Specifications
- Operational Definition
- Exercises and Quiz

#### Measure I:

- Variable and Attribute Data
- Sampling Plan
- Measurement System Analysis
- Data Collection - Check Sheet
- Benchmarking
- Baseline DPMO & Sigma Conversion
- Rolled Throughput Yield
- Exercises and Quiz

#### Measure II:

- Trend Chart
- Histograms
- Measuring Process Variability
- Statistical Process Control
- Rational Subgrouping
- X and Moving Range Control Charts
- Attribute Control Charts
- X-bar and R Control Charts
- Process Capability
- Exercises and Quiz

#### Analyze I - Potential Root Cause

- Cause and Effect Diagrams (Fishbone Charts)
- Five-Why, One-How
- FMEA
- Scatter Plots
- Regression and Correlation Analysis
- Multiple Regression
- Exercises and Quiz

#### Analyze II - Hypothesis Testing

- Introduction to Hypothesis Testing
- Confidence Intervals and Hypothesis Testing
- Comparison of Two Treatments, Z-test, F-Test, t-test
- Comparison of Multiple Treatments - ANOVA
- Exercises and Quiz

### Analyze III - Design of Experiments

- Introduction to Design of Experiments
- Single Factor Experiments
- Blocking
- Exercises and Quiz

### Improve

- Design for Manufacturability/Serviceability/Repairability (DFSS)
- Brainstorming
- Narrowing the List of Ideas
- FMEA
- Error-proofing
- Corrective Action Matrix
- Piloting a Solution
- System Dynamics
- Exercises and Quiz

### Control:

- Control Plan
- SPC Revisited
- FMEA Revisited
- Visual Control - 5-S
- CHECK Process
- Total Productive Maintenance
- Best Practices - Integrating Success
- Exercises and Quiz

### Tools for Success

- Leadership
- Team Development
- Leading Teams
- Leading Change
- Exercises and Quiz

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