Six Sigma Black Belt Course Details

Module 1: The Responsive Six Sigma Organization

• What is Six Sigma?
• Six Sigma Philosophy
• Change Imperative
• Implementing Six Sigma
• Timetable
• Infrastructure
• Recognizing Opportunity
• Methods for Collecting Customer Data
• Becoming a Customer and Market-Driven Enterprise
• Quality Function Deployment
• Benchmarking
• Constraint Management Measurements

Module 2: Data-Driven Management and Maximizing Resources

• Attributes of Good Metrics
• The Balanced Scorecard
• Customer Perspective
• Internal Process Perspective
• Innovation and Learning Perspective
• Financial Perspective
• Strategy Deployment Plan
• Business Planning
• Data Mining
• Choosing the Right Projects
• Analyzing Project Candidates
• Ongoing Management Support
• Individual Barriers to Change
• Throughput-Based Project Selection
• Ongoing Management Support

Module 3: Project Management and Define Phase

• DMAIC and DMADV Deployment Models
• Project Scheduling
• Project Reporting & Budgets
• Six Sigma Teams
• Stages in Group Development
• Member Roles and Responsibilities
• The Define Phase
• Project Charters
• Project Decomposition
• Deliverables
• Top-Level Process Definition
• Assembling the Team

**Module 4: Measure Phase and Process Behavior Charts**

• Process Definition
• Metric Definition
• Process Baseline Estimates
• Control Charts for Variables Data
• Poisson Distribution
• Frequency and Cumulative Distributions
• Sampling Distributions
• Binomial Probability Distribution
• Hypergeometric Probability Calculations
• Normal Probability
• Lognormal Probability
• Exponential Probability
• Control Charts for Variables Data
• Control Limit Equations for Averages and Ranges Charts

**Module 5: Measurement Systems Evaluation and Analyze Phase**

• Definitions
• Measurement System Discrimination
• Stability
• Repeatability
• Linearity
• Output
• Value Stream Analysis
• Value Stream Mapping
• Spaghetti Charts
• Analyzing the Source of Variation
• Cause and Effect Diagrams
• Boxplots
Regression and Correlation Analysis

Module 6: Improve/Design and Control/Verify Phases

- Using Customer Demands to Make Decisions
- Lean Techniques for Optimizing Flow
- Using Empirical Model Building to Optimize
- Data Mining
- Artificial Neural Networks
- Virtual Process Mapping
- Optimization Using Simulation
- Risk Assessment Tools
- Failure Mode and Effect Analysis
- Defining New Performance Standards Using Statistical Tolerancing
- Validating the New Process or Product Design
- Business Process Control Planning