Lean Six Sigma Black Belt Training Program
Onsite – 120 Hours – Optimum Class Size: 6-10 Participants

Training Description:

The Lean Six Sigma Black Belt Training Program combines the proven methods of Lean with the power of Six Sigma to allow you to solve difficult problems within your business. The curriculum is based on the approach pioneered by Motorola and utilized by successful companies of all sizes.

This training will introduce the participants to the structured data driven problem solving methodology known as DMAIC (Define, Measure, Analyze, Improve, Control). This methodology, in concert with the Lean business improvement strategy seeks to identify, reduce, and eliminate defects from products, processes, and business transactions.

Participants will learn critical thinking skills, how to reduce variation and non-value-added activities, gain leadership skills, and focus on the voice of the customer, all while reducing defect rates, cost, and cycle time. Participants will utilize the DMAIC model and will learn statistical methods and software (Minitab) to analyze company data and make process improvements.

You do not need to be a statistician or math wizard to attend. Statistics are presented with the "keep it simple statistically" approach so participants can master the skills. A combination of presentation and hands-on exercises and simulations are used throughout to ensure a practical working knowledge of the methods. Participants who take this class, successfully complete an application project, and pass the Lean Six Sigma certification exam will be certified as a LSS Black Belt.

Training Objective:

The objective of this training will be to have each participant complete at least one management approved project within their organization which will eliminate waste, improve cycle time and/or improve quality. Projects will address specific quality, productivity and process issues using a data driven approach to minimize or reduce process variation. Each student will be required to complete and document a Black Belt project illustrating the business and quality impact of their work for certification. Students will use a Statistical Software package in class (Minitab) to solve statistical analysis problems.

Skill Attainment:

Lean Six Sigma Black Belt Training – Participants will learn how to apply the crucial observational, analytic, and interpersonal skills of a successful Lean Six Sigma Black Belt. These skills include:

- History of Lean and Six Sigma
- Basics of Six Sigma
- Organization of Lean Six Sigma
- Define
- Project Charter
- Gemba

- SIPOC
- Value Stream Mapping
- Voice Of Customer
- Kano Model
- Affinity Diagram
- House Of Quality
- D.O.W.N.T.I.M.E.
- Cost Of Poor Quality

- Introduction to Minitab
- Pareto Charts
- Project Management
- Six Sigma Metrics
- Measure
- Measurement Systems Analysis

- Attribute M.S.A.
- Basic Statistics
- Normality
- Process Mapping
- 5 Points of View
- Data Collection & Sampling
- Graphical Analysis
- Control Charts
- Capability Analysis
- Attribute and Discrete Capability
- Analyze
- Design of Experiments
- Inferential Statistics
- 5 Whys
- Fishbone Diagram
- Cause & Effect Matrix
- Central Limit Theorem
- Hypothesis Testing Risk
- Normal Data Hypothesis Tests
- Non-Normal Data Hypothesis Tests
- Improve
- Principles of Lean
- 6S
- Plant Layout
- Point Of Use Storage
- Batch Size Reduction
- Setup Reduction
- Kanban
- 1-Piece Flow
- Takt Time
- Simple Linear Regression
- Multiple Regression Analysis
- Kaizen
- Theory of Constraints
- Future State Mapping
- Control
- Poka Yoke
- Failure Modes and Effect Analysis
- Visual Management
- Standard Work
- Cross Training
- Overall Equipment Efficiency
- Total Productive Maintenance
- Statistical Process Control
- Control Plans
- Standard Operating Procedures
- Communication Plans
- Audits
- Response Plans

LSS Black Belt Training Overview and Expectations

- 15 days of Interactive Classroom instruction with instructor lead support
- The sessions will be held over a four-to-six-month period and include classroom learning, exercises, activities, demonstrations, on-the-job practical application, homework, and tests
- Within six months after training initiation the participants are expected to complete at least one successful project approved by top management
- Skill requirements
  - Some College Level Math
  - Basic Computer Skills – spreadsheets, word processing, email
  - Access to a computer/laptop both in and out of class
  - Access to Minitab software (company to provide)
- 100% attendance for all classes is required

Expectations from Management

- Will select and approve participant application projects
- Will allow time for project completion in between classes
- Will serve as champions and sponsors for their participants when they need support and resources
- Will attend ending project presentations at a minimum

What the students can expect

- Clear and intuitive classes focused on making Lean Six Sigma simple and fun
- Workshops and practical application sessions – work as a team on exercises including DOE live experiments
- Learn how to manage Lean Six Sigma projects to get results
- One-on-One help as needed in between classes
- Finish a project successfully with a clearly identified and verifiable financial impact
- Have fun!