Six Sigma Black Belt

Course description: This powerful program will provide participants with the necessary tools to make data driven decisions by using applied statistics. Over 35 tools are taught to allow students to gain process knowledge to make their processes Better, Faster, Lower Cost, and Safer. They will deploy these tools through a project using the Define, Measure, Analyze, Improve, and Control (DMAIC) roadmap. The Six Sigma tools strive to reduce process variance, measure the process, and find optimal settings in a pursuit of perfection.

Course Outline

Week 1 (36 hours of instruction)

- **Module 1** - Six Sigma Definitions
- **Module 2** - Getting Started
- **Module 3** - Introduction to Variance Reduction
- **Module 4** - Team Building and Project Management
- **Module 5** - Define Your Project
- **Module 6** - Data Analysis with Basic Stats and Graphs
- **Module 7** - Measurement System

Week 2 (36 hours of instruction)

- **Module 8** - Data Distributions and Probability
- **Module 9** - Confidence Intervals and Sample Size
- **Module 10** - Hypothesis Testing: How to Determine Process Shifts
- **Module 11** - Control Charts
- **Module 12** - Regression Analysis

Note: At the end of this week, the participant would be Green Belt Trained

Basic Requirements for Certification

- Successful completion of the appropriate training, Green or Black Belt.
- One project in an acceptable format which is reviewed and evaluated by TMAC specialists.
- Proof of savings - ROI (dollar amount, lead time, space, etc) when submitting the final project.

Week 3 (36 hours of instruction)

- **Module 13** - Introduction to Design of Experiments (DOE)
- **Module 14** - The Basics: Design of Experiments
- **Module 15** - Two-Level Screening Designs
- **Module 16** - Two-Level Modeling Designs
- **Module 17** - Three-Level Screening Designs
- **Module 18** - Three-Level Modeling Designs
- **Module 19** - Historical Data Design of Experiments