Lean Six Sigma Black Belt

Lean Six Sigma Overview

Lean Six Sigma is a business management system that allows organizations of all types to drastically improve their bottom line by creating, measuring, and monitoring everyday business activities that in turn leads to reduced waste, fewer mistakes, and increased customer satisfaction. Lean Six Sigma helps you focus on proactive solutions that will keep problems from happening in the first place. While Lean Six Sigma is designed to improve processes and increase customer value, the reason it is so successful is that it provides immediate and measurable results to your company's bottom line. The power of Lean Six Sigma is that it is not just a high level philosophy, but also includes a structured set of tools to help you ask the tough questions, get to the root causes, and find permanent solutions to any problem or opportunity. You will benefit from Lean Six Sigma if you:

- Need to reduce costs and improve margins
- Want to move from constant firefighting to doing it right the first time
- Want to get your entire organization involved in reducing errors, improving processes, and focused on the customer
- Want a program that will develop new skills and competencies across the entire organization
- Need to improve processes that are keeping you from growing
- Want a common language and set of tools that will enable a culture of continuous improvement
- Need a consistent and repeatable problem solving methodology

Black Belt Course Overview

The Lean Six Sigma Black Belt focuses on mastery of Lean Six Sigma theory, strategies, and advanced tools and techniques through in-depth application and analysis, thereby enhancing professional expertise to implement and lead complex projects, and the skills to teach and mentor others. The focus of the Black Belt course is on in-depth coverage of topics including, but not limited to: value stream mapping, advanced statistical theory, design of experiments, advanced design for six sigma (DFSS), project management for large projects, coaching and mentoring teams for process improvement, advanced hypothesis testing, history and theory of quality, advanced lean theory and tools, implementation of LSS in an organization, and use of advanced Minitab features.

A *certificate of completion* from Washburn University for 80 professional development hours will be issued to all participants who successfully complete the program requirements

Learning Outcomes

- Knowledge and level of understanding to teach White and Yellow Belt classes
- Understand the key elements of implementing Lean Six Sigma in an organization
- Understand advanced statistical concepts
- Understand the background and theory of Lean Six Sigma
- Be able Mentor and Coach other team members just starting to learn about LSS
- Mange multiple, complex projects
- Learn the skills and knowledge to earn a LSS Black Belt Certificate

Format

- The Black Belt class is comprised of approximately 48 hours of class room training plus additional 32 hours of online work and homework assignments that reinforce the class room training.
- Online content, homework, and applications supplement class time
- Completion of a project and quizzes are required for certification

Materials

- The following course books will be used
    - *Learning to See: Value Stream Mapping to Add Value and Eliminate MUDA*
    - *Managing to Learn: Using the A3 Management Process*
    - *CSSBB Primer*
- Minitab Statistical software is used throughout the course
- Electronic copies of templates and tools are provided

Class Size

- Minimum of 5 and maximum of 10 (can be modified based on client need)

Audience

- All industries and types of organizations
- Project leaders who will be driving Lean Six Sigma projects
- Leaders who will be responsible for championing or sponsoring Lean Six Sigma

Prerequisites

- Prior participation in the Lean Six Sigma: Green Belt course

- Participants must have a laptop with the Minitab Statistical Software and be familiar with basic use and applications

Certification

- A certificate of completion for 80 professional development hours will be issued to all participants who successfully complete the program requirements

Course Outline

Day 1
- A3 Documents
- Value Stream maps
- Regression and Multivariate Analysis
- FMEA
- Advanced Hypothesis testing

Day 2
- Advance Lean Theory and tools
- Project Management
- Design for Six Sigma (DMADV)/Innovation
- Factor Analysis

Day 3
- Design of Experiments (DOE)
- Advanced Minitab
- QFD

Day 4
- Advanced SPC concepts
- Understand how to use basics of distribution tables

Day 5
- Organizational Change Management
- Team management
- Other software used in LSS
- TRIZ

Day 6
- Starting and sustaining a LSS program
- Project Reviews
- Case studies/Site visits