Lean Six Sigma Green 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

Green Belt Course Overview

The Green Belt course is designed to provide the tools, methods, and skills needed to effectively drive a medium sized process improvement project for your organization. The course drills into the details of Six Sigma, Lean, and Theory of Constraints to provide a well-rounded view of process improvement techniques. The course will also cover important elements needed to successfully implement Lean Six Sigma within an organization.

Participants will learn how to guide Lean Six Sigma projects that create immediate and lasting value to an organization. The skills and tools are applied immediately through individual and team exercises to gain maximum learning. Participants will be able to apply

the concepts learned in the class to a business improvement project back in their work environment.

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

Learning Outcomes

- Learn how to successfully complete a LSS Project
- Understand the key factors critical to a successful implementation of Lean Six Sigma
- Be able to utilize the Business Improvement Guide (BIG) project execution process
- Understand the Crimson Corporation Process Improvement Roadmap®
- Have a solid understanding of LSS
- Understand and be able to use the core LSS tools
- Be able to mentor and coach other team members just starting to learn about LSS
- Be able to make process improvement changes within the organization
- Be able to provide immediate benefits to the organization by completing a LSS project
- Understand and be able to effectively use basic tools and methods of project management and organizational change management (OCM)
- Understand how to effectively manage teams and meetings to drive project success

Format

- It is designed to be a seventy-two (72) hour, classroom-based course. The preferred format is nine days of class, three clusters of three days scheduled three to four weeks apart
- The course is designed to be extremely interactive and has a mix of learning methods including lecture, reading assignments, simulations, individual and team exercises, case studies, and videos.
- Participants will participate in a comprehensive simulation conducted throughout the course to gain experience using the tools and methods learned in class
- Online content, homework, and applications supplement class time
- Completion of a project and quizzes are required for certification

Materials

- A detailed course workbook is provided (Crimson Corporation's Business Improvement Guide). This book will also serve as a valuable reference guide for future LSS project work
- *The Goal* and will also be used in the course and will be provided
- Minitab Statistical software is used throughout the course

- Electronic copies of templates and tools are provided

Class Size

- Minimum of eight (8); maximum of twenty (20)

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: Yellow Belt course or prior Lean Six Sigma experience is strongly encouraged
- Participants must have a laptop with the Minitab Statistical Software and be familiar with basic use and applications

Key Terms

Students will gain confidence understanding these terms and Lean Six Sigma concepts:

- DMAIC process improvement methodology
- Project charter
- Voice of the customer
- Swim lane process map (and other process maps)
- Fishbone root cause analysis tool
- 5 Why root cause analysis tool
- Pareto charts
- Graphical analysis tools
- Control Charts
- Measurement systems analysis (MSA)
- Measurement plan development
- Hypothesis testing
- Lean principles
- 7 Wastes
- 5S
- Kanban
- Kaizen events
- Continuous flow processes
- Value stream maps
- Theory of Constraints
- Project Management

- Presentation skills
- Organizational Change Management (OCM)
- Inferential statistics
- Innovation
- Design for Six Sigma
- TRIZ
- Scamper

Course Outline

Week 1

Day 1

- Introductions
- Course Overview
- Lean Six Sigma Overview
    - History of quality
    - History of Lean and Six Sigma
    - Goals of Lean Six Sigma
    - Process improvement overview
    - Process variation overview
    - Operational enemies of Lean
    - Design for Six Sigma
    - DMAIC
    - Soft skills for Lean Six Sigma
    - Implementing Lean Six Sigma
    - Organizational change management
    - Lean Six Sigma belt levels (White, Yellow, Green, Black)
- Certification requirements
- Green Belt Project Selection

Day 2

- Define Overview
- Identify improvement opportunities
- Collect Voice of the Customer data
- Project Charters
- Process mapping tools and techniques
- Project Management for Lean Six Sigma Module
- Introduction to class case study exercise

Day 3

- Team Development for Lean Six Sigma Module
- Presentation Skills for Lean Six Sigma Module
- Class case study exercise

- Session 1 wrap up

Week 2

Day 4

- Measure Overview
- Understand the current process
- Create a measurement plan
- Perform Lean Assessment
- Overview of statistics
- Class case study exercise

Day 5

- Project presentations and review
- Measurement tools
- Execute measurement plans
- Validate Measurement Systems (MSA)
- Class case study exercise

Day 6

- Lean Discussion
- Theory of constraints
- *The Goal* Video
- Lean Simulation
    - Lean background
    - Introduction to Lean tools
    - 7 Wastes
    - Value stream mapping
    - 5S
    - Kaizen
    - Pull systems
- Lean Simulation – continued
- Session 2 wrap up

Week 3

Day 7

- Analyze Overview
- Graphical Data analysis
- Process analysis
- Statistical analysis
- Root Cause Analysis techniques (RCA)
- Develop solutions
- Test/pilot solutions
- Update process maps and standard operating procedures (SOPs)

- Create a rollout plan
- Implement the final solution
- Class case study exercise

Day 8

- Project presentations and review
- Hypothesis Testing
- Control Overview
- Develop and implement a control plan
- Validate achievement of goals
- On-going tracking and reporting
- Institutionalize the improvements
- Lessons Learned
- Rewards and recognition
- Class case study exercise

Day 9

- Class case study exercise
- Control Charts
- Final case study class presentations
- Wrap up
- Course Conclusion