



Six Sigma Green and Black Belt Certification with Exam

MSB108 / 260 Hours / 12 Months / Self-Paced / Materials Included

Course Overview:

The purpose of this course is to prepare students to be an ASQ Certified Six Sigma Green Belt (CSSGB) professional. Students will develop a thorough understanding of all aspects within the phases of D-M-A-I-C. They will also develop an understanding of how to perform and interpret Six Sigma tools and how to use standard principles of Lean.

The Six Sigma Management System has evolved to become an integration of business best practices that unleashes the power of the Six Sigma tools and methods in a way that fosters focused execution and breakthrough improvements. Using the Six Sigma Management System as the overall context for driving business improvement, this course provides unique insight for Black Belts, Six Sigma leaders, and all Six Sigma practitioners for how to apply the wide variety of tools and methods that sit inside of the Six Sigma tool set.

The content in the certification course will prepare students to take the associated industry recognized exam. Please note that the individual state requirements may vary. Students will be responsible to check with their state's governing body for state specific requirements.

Course Outline:

Six Sigma Green Belt Certification Prep Curriculum:

Lesson 1: Building the Responsive Six Sigma Organization

Six Sigma is a rigorous, focused, and highly effective implementation of proven quality principles and techniques. Incorporating elements from the work of many quality pioneers, Six Sigma aims for virtually error-free business performance. In this lesson, we will introduce the Six System Organization.

Lesson 2: Recognizing and Capitalizing on Opportunity

Lesson 2 describes the organizational mechanisms required to recognize the key stakeholder needs, which provide opportunities for organizational growth and, in some cases, survival. This chapter describes a number of approaches for gathering customer input on their value definition. It then explores other means of identifying opportunities, including quantifying costs of poor quality, benchmarking best practices, and innovation.

Lesson 3: Data-Driven Management

In this lesson, we will develop an understanding of how data-driven management provides a means of achieving organizational objectives by quantifying needs or wants of stakeholder groups relative to current baselines, and acting upon the data to reduce those critical gaps in performance.

Lesson 4: Maximizing Resources

This lesson addresses Six Sigma project selection and the management support activities related to project success. Topics will include goals, project management, project selection, and project execution.

Lesson 5: Project Management Using DMAIC and DMADV

In this lesson, we will discuss and develop an understanding of the Define-Measure-Analyze-Improve-Control model and the Define-Measure-Analyze-Design-Verify model by examining the aspects of each as well as comparing and contrasting the two.

Lesson 6: The Define Phase

In this lesson, we will discuss the key objectives within the Define phase:

- Develop the Project Charter
- Define scope, objectives, and schedule
- Define the process (top-level) and its stakeholders
- Select team members
- Obtain authorization from sponsor
- Assemble and train the team

Lesson 7: The Measure Phase

In this lesson, we will discuss the objectives of the Measure stage, which include:

- Process definition: to ensure the specific process under investigation is clearly defined.
- Metric definition: to define a reliable means of measuring the process, relative to the project deliverables.
- Establish the process baseline: to quantify the current operating results as a means of verifying previously defined business needs, and to properly substantiate improvement results.
- Evaluate measurement system: to validate the reliability of data for drawing meaningful conclusions.

Lesson 8: Process Behavior Charts

In this lesson, we will discuss various topics related to behavior charts, including distribution, control charts for variable data and attributes data, control chart selection and organization, short run statistical process control, SPC techniques, and process capability indices.

Lesson 9: Measurement Systems Evaluation

A good measurement system possesses certain properties. First, it should produce a number that is “close” to the actual property being measured. Second, if the measurement system is applied repeatedly to the same object, the measurements produced should be close to one another. Third, the measurement system should be able to produce accurate and consistent results over the entire range of concern. Fourth, the measurement system should produce the same results when used by any properly trained individual. Finally, when applied to the same items the measurement system should produce the same results in the future as it did in the past.

Lesson 10: Analyze Phase

In this lesson, we will develop an understanding of the key objectives of the Analyze phase, including:

- For existing processes, analyze the value stream to identify ways to eliminate the gap between the current performance and the desired performance.
- Analyze the sources of variation that contribute to the gap (for DMAIC) or that will contribute to the design performance (for DMADV).
- Determine the drivers, the little x's that correlate to the customer requirements (CFQ, CFS, CFC) and significantly influence the process or design.
- Use benchmarking techniques described in Chap. 3 to evaluate best in class or similar products or services.

Lesson 11: The Improve/Design Phase

The primary objective of the Improve or Design stage of DMAIC/DMADV is to implement the new system. The first consideration is to prioritize the various opportunities, if more than one proposal exists. Once a preferred approach has been determined, the new process or product design is defined and optimal settings established. This new design can then be evaluated for risks and potential failure modes.

Lesson 12: The Control/Verify Phase

In this lesson we will discuss the main objectives of the Control/Verify stage, including:

- Statistically validate that the new process or design meets the objectives and benefits sought through the project
- Develop and implement a control plan to institutionalize the new process or design
- Document lessons learned and project findings, as discussed in the “Tracking Six Sigma Project Results” section of Lesson 4

Lesson 13: Final Test

Six Sigma Black Belt Certification Prep Curriculum:

Lesson 1: The Six Sigma Management System

This lesson focuses on the extension of Six Sigma into a management system that encompasses all levels of an organization. While implementing Six Sigma through individual projects has produced significant results in many organizations, sustainable, breakthrough improvements are realized by those organizations whose leadership has embraced Six Sigma and incorporated it into their vision, strategies, and business objectives - in short, adopted Six Sigma as the system for managing their organizations. The Six Sigma Management System enables a leadership team to align on their strategic objectives, establish their critical operational measures, and determine their organizational performance drivers and then use those to implement, drive, monitor, and sustain their Six Sigma effort. Six Sigma has been labeled as a metric, a methodology, and now, a management system. While Green Belts, Black Belts, Master Black Belts, Champions and Sponsors have all had training on Six Sigma as a metric and as a methodology, few have had exposure to Six Sigma as an overall management system. Reviewing the metric and the methodology will help create a context for beginning to understand Six Sigma as a management system.

Lesson 2: Six Sigma and Lean

Many different approaches have been taken to improve business performance over the last several decades. Like anything in life, each approach has its own set of strengths and weaknesses. Each one also offers a slightly different perspective on how to improve performance. Some of these different perspectives may be beneficial to organizations trying to implement broad based improvement efforts.

Lesson 3: Process Improvement Teams and Tools

When an organization adopts the Six Sigma Management System as their business process improvement model, it becomes an umbrella business strategy that should include a variety of team-based initiatives. The purpose of this lesson is to address various team approaches that have been proven to be successful as part of a Six Sigma system, to present management's varying roles and responsibilities with each team approach, and to illustrate the common tools used by teams to implement improvements and types of measurements that drive performance.

Lesson 4: Six Sigma Teams, Methodology and Tools

This lesson is dedicated to the power of Six Sigma teams that apply a deeper level of analysis and statistical rigor to reduce variation, stabilize and optimize business processes - all for the purpose of bottom-line impact for the organization.

Lesson 5: Six Sigma Impact Measurement

This lesson focuses on measuring the results of a Six Sigma campaign. It will first review the importance of metrics and measurement to all improvement activities. Then it will focus on the need to have a selected, few critical strategic metrics to drive the Six Sigma campaign. It will discuss some historical difficulties with metrics and improvement campaigns, and suggest guidelines for selecting meaningful metrics and goals for organizational performance improvement. The discussion will not be limited to financial goals and metrics. Business objectives that drive Six Sigma Campaigns must be multifaceted.

Lesson 6: Supplemental Information

This lesson will provide supplemental information on two specific topics: Innovation and Measurement System Analysis. Achieving a dramatic improvement is a defining attribute of Six Sigma. Without realizing an innovative or breakthrough solution, one misses the main tenet of Six Sigma and lessens the opportunity to succeed. Six Sigma implies lots of improvement very fast. Incremental improvements are not sufficient to achieve Six Sigma performance. It is not just the current performance; instead, the rate of improvement equally matters. The power of Six Sigma lies in its disciplined, structured approach to identifying and solving process issues. The biggest potential pitfall of the Six Sigma approach is failing to adhere to that discipline. It is in the area of Measurement System Analysis (MSA) that discipline often falls by the wayside. When considering measurements for non-manufacturing processes, MSA often becomes the most neglected step.

All necessary materials are included.

Certification(s):

This course prepares a student to take the **ASQ Six Sigma Green Belt and Six Sigma Black Belt** certification exams. The cost of the course includes **ONE** of the certification exams.

System Requirements:

Internet Connectivity Requirements:

- Cable and DSL internet connections are recommended.

Hardware Requirements:

- Minimum Pentium 400 Mhz CPU or G3 Macintosh. 1 GHz or greater CPU recommended.
- 256MB RAM minimum. 1 GB RAM recommended.
- 800x600 video resolution minimum. 1025x768 recommended.
- Speakers/Headphones to listen to Dialogue steaming audio sessions.
- A microphone to speak in Dialogue streaming audio sessions.

Operating System Requirements:

- Windows Vista, 7, 8, 8.1, 9, 10
- Mac OSX 10 or higher.
- OpenSUSE Linux 9.2 or higher.

Web Browser Requirements:

- Google Chrome is recommended.
- Firefox 13.x or greater.
- Internet Explorer 6.x or greater.
- Safari 3.2.2 or greater.

Software Requirements:

- Adobe Flash Player 6 or greater.
- Oracle Java 7 or greater.
- Adobe Reader 7 or greater.

Web Browser Settings:

- Accept Cookies
- Disable Pop-up Blocker.

****Outlines are subject to change, as courses and materials are updated.****