LEAN SIX SIGMA

BLACK BELT

Online Training and Certification

BALDRIGE FOUNDATION
INSTITUTE FOR PERFORMANCE EXCELLENCE

SSGI

TRAINING PROGRAM

Upon enrolling you will have access to:

- Full Course (instructor led videos, presentations, case studies, templates, quizzes).
- Study Guide.
- Flash Cards.
- Practice Exam.
- Simulated Project.

COMPLETION TIME

On average, people finish the program within 3-6 weeks if they can spend 1-3 hours a day, 5 days a week on the program.

WHAT WILL YOU LEARN?

- The role of Lean Six Sigma in delivering efficient and high-quality services.
- A framework (DMAIC) for managing all Lean Six Sigma projects.
- How to recognize process improvement opportunities.
- The most important tools for analyzing and improving process efficiency.
- Advanced statistical concepts used to monitor and control operational processes.
- How to design Six Sigma processes to meet industry standards.

CERTIFICATION DETAILS

Black Belt Certification Exam (Included in Purchase)
Exam: 100 multiple choice & true/false questions.
Passing Score: 75%.
Retakes: Unlimited retakes at no additional fee.
How to Take Exam: Online, at your own convenience.
Time Limit: 2-hours.
Re-Certification/Renewal: Not needed, certification has lifetime value.

AS A CERTIFIED BLACK BELT PROFESSIONAL, YOU WILL BE QUALIFIED TO MANAGE AND LEAD PROJECT TEAMS.

SSGI AND BALDRIGE FOUNDATION PARTNERSHIP

Six Sigma Global Institute (SSGI) has formed a co-branded partnership with the Baldrige Foundation to offer a variety of online Lean Six Sigma training and certification programs. With this rare opportunity, professionals have the chance to learn how to deliver high-quality efficient services and products while simultaneously earning a globally recognized Lean Six Sigma certification. All training has been aligned to the Baldrige foundation excellence program.

CEU'S FOR PMI® AND SHRM®

SSGI has been awarded the title of Global Registered Education Provider (R.E.P.) by the Project Management Institute (PMI). You will be able to earn pre-approved PDUs with all programs. SSGI is also a Society for Human Resource Management (SHRM) Recertificaiton provider, approved to offer PDCs.

Course Instructor

Dr. Barry Shore, Phd

Professor of Business at Peter T. Paul Business School, University of New Hampshire

With over 40 years' experience in industry and teaching, Professor Shore has earned a reputation as one of the leading authorities in Six Sigma and Project Management. His pioneering work in Project Management dates back to General Electric and later Hewlett Packard.

Dr. Shore has written over 100 peer reviewed papers published in leading scholarly journals, four books published by McGraw Hill book Company and Holt, Rinehart and Winston, and hundreds of articles in trade publications. McGraw Hill honored him as a prize winning author for his book on operations management

He has consulted at many of the top organizations throughout the world including Westinghouse, Chase Manhattan Bank, Timberland, United States Navy, Deutsche Telecom (Germany) and Doosan Heavy Industries (South Korea).

COURSE CURRICULUM

1 Management of Lean Six Sigma
1.1 Management and Lean Six Sigma
1.2 Lean and Six Sigma Defined
1.3 Summary

2 Lean Organizations
2.1 Lean Organizational Culture
2.2 Challenges in Maintaining a Lean Organizational Culture
2.3 Summary

3 Basics of Lean Six Sigma
3.1 Concept of a Process
3.2 Four Fundamental Challenges
3.3 Critical to Quality, Critical to Customer and Cost of Poor Quality
3.4 Voice of the Customer and Voice of the Process
3.5 Managing Process Mean and Variation
3.6 Continuous Improvement
3.7 Seven Wastes
3.8 Five Ss
3.9 Cycle Time
3.10 Whole Foods
3.11 Summary

4 Lean Six Sigma Cycle: DMAIC
4.1 Framework
4.2 Applying the Framework
4.3 Measurement Systems Analysis: Gage R&R
4.4 Measurement System Analysis: Bias and Linearity
4.5 Analyzing Gage R&R Data
4.6 Summary

5 Building the Project Charter
5.1 Project Plan
5.2 Summary

6 Process Design and Improvement
6.1 SIPOC
6.2 Value Stream Mapping
6.3 Process Mapping
6.4 X-Y Matrix
6.5 Kanban
6.6 Takt Time
6.7 Cooper Mini
6.8 Summary

7 Charting
7.1 Root Cause
7.2 Histograms
7.3 The Pareto Principle and Building a Pareto Chart
7.4 Creating A Fishbone Diagram
7.5 Fishbone Examples in Marketing, Operations and Customer Satisfaction
7.6 Summary

8 Descriptive Statistics
8.1 Measures of Central Tendency
8.2 Standard Deviation
8.3 Types of Variables
8.4 Summary

9 Probability Distributions
9.1 Classes of Distributions
9.2 Normal Distribution
9.3 Z Distribution and Z Values
9.4 Binomial Distribution
9.5 Summary

10 Process Variation
10.1 Common and Special Cause Variation
10.2 Multi-Vari
10.3 Summary

11 Six Sigma Process
11.1 Standard Deviation and the Concept of Six Sigma
11.2 DPU, DPMO, RTY, FTY
11.3 Summary

COURSE CURRICULUM

12 Sampling and Process Control
12.1 Samples, Subgroups and Rational Subgroups
12.2 Sampling
12.3 Process Control
12.4 Sampling Techniques
12.5 Summary

13 Control Charts and Sampling Strategy
13.1 Basic Charts
13.2 Control Charts
13.3 Positioning the UCL and LCL
13.4 Alpha Errors
13.5 Beta Errors
13.6 Sampling Plan
13.7 Summary

14 Selecting the Appropriate Control Chart
14.1 A Step-by-Step Approach
14.2 Summary

15 X-Bar Charts, N<12
15.1 Designing a New Six Sigma Monitoring System
15.2 Establishing the Centerline of the X Bar Chart
15.3 Setting the UCL and LCL
15.4 Summary

16 R-Charts, N<12
16.1 Establishing the Center Line
16.2 Setting the UCL and LCL
16.3 Summary

17 X-Bar Charts: 12
17.1 X-Bar Charts, 12
17.2 Summary

18 S-Charts, 12
18.1 Constructing the S-Chart
18.2 Summary

19 X-Bar and S-Charts, N>25
19.1 X-Bar Charts, N>25
19.2 S-Charts, N>25
19.3 Summary

20 P-Charts
20.1 P-Charts
20.2 Summary

21 I-MR Charts
21.1 I-MR Chart
21.2 Summary

22 U-Charts
22.1 Defects and Defective Items
22.2 Concept of the U-Chart
22.3 Designing the U-Chart
22.4 Summary

23 NP c CumSum EWMA
23.1 NP Chart
23.2 c-Charts
23.3 CumSum Charts
23.4 EWMA Charts
23.5 Summary

24 Customer Expectations: LSL and USL
24.1 Customer Expectations
24.2 Taguchi Loss Function
24.3 Process Capability
24.4 Summary

25 Anticipating Problems and Risk Mitigation
25.1 Failure Mode and Effects Analysis
25.2 Poka-Yoke
25.3 Elements of a Control and Response Plan
25.4 PillPak
25.5 Summary

COURSE CURRICULUM

26 Confidence Interval Estimation
26.1 From Sample to Population
26.2 Constructing the Confidence Interval for Means
26.3 Sample Sizes
26.4 Constructing the Confidence Interval for Proportions
26.5 Summary

27 Hypothesis Testing
27.1 The Basics of Hypothesis Testing
27.2 One Sample t Test
27.3 Two Sample t Test
27.4 Anova
27.5 Pfizer
27.6 Summary

28 Non-Parametric Hypothesis Tests
28.1 Assumptions
28.2 One Sample Sign
28.3 Mann Whitney Test
28.4 Kruskal Wallis Test
28.5 Chi Square
28.6 Friedman Test
28.7 Summary

29 Simple Linear Regression
29.1 Understanding the Relationship Between Variables
29.2 The Regression Line
29.3 Significance
29.4 Summary

30 Multiple Regression
30.1 Multiple Regression
30.2 Significance
30.3 Residuals
30.4 Multicollinearity
30.5 Prediction Interval
30.6 Summary

31 Design of Experiments
31.1 Experimental Objectives
31.2 Factors Processes and Responses
31.3 One Factor at a Time OFAT
31.4 Full Factorial Design
31.5 Executing and Evaluating a Full Factorial Design
31.6 Interaction
31.7 Another Example
31.8 Randomization, Replication and Blocking
31.9 Summary

Project
Directions
Universal Insurance
Template Solutions