

Lean Six Sigma Green Belt

Applied Technology Academy

This four-day course prepares you for the Lean Six Sigma Green Belt Certification. This will provide you with the knowledge and skills to become a process improvement specialist and drive change, transform processes, optimize efficiency, and excel in your field with the recognition and reward that you deserve. Pricing includes course instruction, all course materials, and two exam vouchers.

LEVEL	DURATION	EXPERIENCE	AVERAGE SALARY	LABS
Beginner	4 Days	1 year: Process Improvement	\$97,449	No

Course Overview

During class, participants will be introduced to the practical and testable concepts found on the LSSGB (Lean Six Sigma Green Belt) exam, accredited by The Council for Six Sigma Certification (CSSC).

Participants receive four days (28 contact hours) of instruction, plus numerous online tutorials to help reinforce the principles. Several banks of sample questions are included to help the participants gauge their readiness to take the LSSGB exam. The passing score needed for the LSSGB exam is 80%.

Career Advancement: Earning a Green Belt Certification opens doors to various career opportunities and advancement, as it's a recognized achievement in process improvement

Problem-Solving Proficiency: Develop strong problem-solving abilities, allowing you to address complex challenges and contribute to organizational success

- **Leadership Potential:** Green Belts often play crucial roles in process improvement teams, providing leadership and guidance
- **Salary Enhancement:** Many organizations value Green Belt-certified professionals, which can lead to increased earning potential

Global Recognition: Lean Six Sigma Green Belt Certification is acknowledged worldwide, making it valuable for career growth in diverse industries and locations

Process Optimization: You'll learn how to optimize processes, reduce defects, and enhance customer satisfaction, making you a valuable asset to any organization

Project Management Skills: Acquire strong project management skills that are essential for successful process improvement projects

Professional Growth: Lean Six Sigma encourages continuous learning and skill development, supporting your ongoing professional growth and placing you on an upwardly mobile path in the Lean Six Sigma Industry

Course Outline

- **Lesson 1: Define Phase**
 - 1.1 Overview of Six Sigma
 - 1.1.1 What is Six Sigma
 - 1.1.2 Six Sigma History
 - 1.1.3 Six Sigma Approach $Y = f(x)$
 - 1.1.4 Six Sigma Methodology
 - 1.1.5 Roles & Responsibilities
 - 1.2 Fundamentals of Six Sigma
 - 1.2.1 Defining a Process
 - 1.2.2 VOC & CTQ's
 - 1.2.3 QFD
 - 1.2.4 Cost of Poor Quality
 - 1.2.5 Pareto Analysis (80:20 rule)
 - 1.3 Lean Six Sigma Projects
 - 1.3.1 Six Sigma Metrics
 - 1.3.2 Rolled Throughput Yield
 - 1.3.3 Business Case & Charter
 - 1.3.4 Project Team Selection
 - 1.3.5 Project Risk Management
 - 1.3.6 Project Planning
 - 1.4 Lean Fundamentals
 - 1.4.1 Lean and Six Sigma
 - 1.4.2 History of Lean
 - 1.4.3 Seven Deadly Muda
 - 1.4.4 Five-S (5S)
 - Define Phase Practice Test
- **Lesson 2: Measure Phase**
 - 2.1 Process Definition
 - 2.1.1 Cause & Effect Diagram
 - 2.1.2 Cause & Effect Matrix
 - 2.1.3 Process Mapping
 - 2.1.4 Failure Modes & Effects Analysis
 - 2.1.5 Theory of Constraints
 - 2.2 Six Sigma Statistics
 - 2.2.1 Basic Statistics
 - 2.2.2 Descriptive Statistics

- 2.2.3 Distributions & Normality
- 2.2.4 Graphical Analysis
- 2.3 MSA
 - 2.3.1 Precision & Accuracy
 - 2.3.2 Bias, Linearity & Stability
 - 2.3.3 Gage R&R
 - 2.3.4 Variable & Attribute MSA
- 2.4 Process Capability
 - 2.4.1 Capability Analysis
 - 2.4.2 Concept of Stability
 - 2.4.3 Attribute & Discrete Capability
 - 2.4.4 Monitoring Techniques
- Measure Phase Practice Test
- **Lesson 3: Analyze Phase**
 - 3.1 Patterns of Variation
 - 3.1.1 Multi-Vari Analysis
 - 3.1.2 Classes of Distributions
 - 3.2 Inferential Statistics
 - 3.2.1 Understanding Inference
 - 3.2.2 Sampling Techniques & Uses
 - 3.2.3 Sample Size
 - 3.2.4 Central Limit Theorem
 - 3.3 Hypothesis Testing
 - 3.3.1 Goals of Hypothesis Testing
 - 3.3.2 Statistical Significance
 - 3.3.4 Risk; Alpha & Beta
 - 3.3.5 Types of Hypothesis Test
 - 3.4 Hypothesis Tests: Normal Data
 - 3.4.1 1 & 2 sample t-tests
 - 3.4.2 1 sample variance
 - 3.4.3 One Way ANOVA
 - 3.5 Hypothesis Tests: Non-Normal Data
 - 3.5.1 Mann-Whitney & Mood's Median
 - 3.5.2 Kruskal-Wallis
 - 3.5.3 Moods Median
 - 3.5.4 Friedman
 - 3.5.5 1 Sample Sign
 - 3.5.6 1 Sample Wilcoxon

- 3.5.7 1 and 2 Sample Proportion
- 3.5.8 Chi-Squared
- 3.5.9 Test of Equal Variances
- Analyze Phase Practice Test
- **Lesson 4: Improve Phase**
 - 4.1 Simple Linear Regression
 - 4.1.1 Correlation
 - 4.1.2 X-Y Diagram
 - 4.1.3 Regression Equations
 - 4.1.4 Residuals Analysis
 - 4.2 Multiple Regression Analysis
 - 4.2.1 Non-Linear Regression
 - 4.2.2 Multiple Linear Regression
 - 4.2.3 Confidence Intervals
 - 4.2.4 Residuals Analysis
 - 4.2.5 Data Transformation, Box Cox
 - 4.2.6 Stepwise Regression
 - 4.2.7 Logistic Regression
 - 4.3 Designed Experiments
 - 4.3.1 Experiment Objectives
 - 4.3.2 Experimental Methods
 - 4.3.3 DOE Design Considerations
 - 4.4 Full Factorial Experiments
 - 4.4.1 2k Full Factorial Designs
 - 4.4.2 Linear & Quadratic Models
 - 4.4.3 Balanced & Orthogonal Designs
 - 4.4.4 Fit, Model & Center Points
 - 4.5 Fractional Factorial Experiments
 - 4.5.1 Designs
 - 4.5.2 Confounding Effects
 - 4.5.3 Experimental Resolution
 - Improve Phase Practice Test
- **Lesson 5: Control Phase**
 - 5.1 Lean Controls
 - 5.1.1 Control Methods for 5S
 - 5.1.2 Kanban
 - 5.1.3 Poka-Yoke

- 5.2 Statistical Process Control (SPC)
- 5.2.1 Data Collection for SPC
- 5.2.2 I-MR Chart
- 5.2.3 Xbar-R Chart
- 5.2.4 U Chart
- 5.2.5 P Chart
- 5.2.6 NP Chart
- 5.2.7 X-S chart
- 5.2.8 CumSum Chart
- 5.2.9 EWMA Chart
- 5.2.10 Control Methods
- 5.2.11 Control Chart Anatomy
- 5.2.12 Subgroups, Variation, Sampling
- 5.2.13 Center Line & Control Limits
- Control Phase Practice Test

Intended Audience

This course is designed for those with experience in leading or participating in process improvement or continuous improvement initiatives who want to earn their LSSGB certification, as well as individuals looking to broaden their knowledge and advance their careers in the field of quality and continuous improvement.

Prerequisites

Learners need to possess an undergraduate degree or a high school diploma.

Follow-On Courses

Lean Six Sigma Black Belt

SIX SIGMA

Mastered and implemented by Motorola Corp., Six Sigma is regarded as the gold standard in methodologies for process improvement.

The core focus of Six Sigma is to reduce variance and errors in a production process. The result is higher quality products and services. The bottom-line goal is to reduce defects to 3.4 per one million opportunities.

SIX SIGMA LEAN

A true combination of the best of Six Sigma and Lean, and most often used by organizations that realized they had issues in both arenas.

Six Sigma Lean results in eliminating waste as with methods defined in Lean and garnering process improvement by implementing DMAIC and DMADV in place.

LEAN

Similar to Six Sigma in its focus on process improvement, Lean has a driving focus on attacking and eliminating waste.

Quite simply, if an activity does not add value to the end user of the product or service it should be eliminated. In our Lean Six Sigma training, you will learn the eight key areas in which Lean seeks to eliminate waste.

Ready to enroll? Call 800.674.3550 or email Info@AppliedTechAc.com — private team cohorts, GSA MAS purchasing, military credentialing funding, VA GI Bill and VR&E and student financing available.