



## **LEARN HOW** to achieve continuous improvement in your organization

This 80-hour course provides comprehensive statistical training for Black Belts. You'll learn to perform a wide-range of statistical analyses to apply in the measure, analyze, improve and control phases of a Six sigma project.

To successfully lead a project, you need to learn how to use the best statistical software available. In addition, to use the software effectively, you need a thorough understanding of the underlying statistical concepts and assumptions. This course focuses on preparing you well for both skills.

During the course, you'll be a licensed user of the highly acclaimed Minitab Quality Trainer. The software walks you through 141 interactive lessons, including basic statistics, control charts, process capability, ANOVA, Design of Experiments, regression — everything you'll need as a Black Belt to analyze data for quality improvement. You'll complete 31 exercises using the Minitab software, which is included in your course fee.

Your instructor has a doctorate in statistics, and she's readily available to help via discussion forums or email.

Material covered in the course spans the [American Society for Quality's Black Belt body of knowledge](#).

### **Course information**

**Course format:** The course is online, self-paced with instructor support and feedback. Students will submit assignments via an online discussion board and assignment tool.



# Statistical Methods for Lean Six Sigma BLACK BELT

## Course Outline:

In addition to the [Minitab Trainer](#) curriculum, the course covers these areas:

- » Types of Data
- » Using Graphs to Analyze Data
- » Using Statistics to Analyze Data
- » Fundamentals of Statistical Inference
- » Sampling Distributions
- » Normal Distribution
- » Tests and Confidence Intervals
- » 1-Sample t-Test
- » 2 Variances Test
- » 2-Sample t-Test
- » Paired t-Test
- » 1 Proportion Test
- » 2 Proportions Test
- » Chi-square Test
- » Statistical Process Control
- » Control Charts for Variables Data in Subgroups
- » Control Charts for Individual Observations
- » Control Charts for Attributes Data
- » Process Capability for Normal Data
- » Capability Indices
- » Process Capability for Nonnormal Data
- » Fundamentals of ANOVA
- » One-way ANOVA
- » Two-way ANOVA
- » Relationship between Two Quantitative Variables
- » Simple Regression
- » Fundamentals of Measurement Systems Analysis
- » Repeatability and Reproducibility
- » Graphical Analysis of a Gage R&R Study
- » Variation
- » ANOVA with a Gage R&R Study
- » Gage Linearity and Bias Study
- » Attribute Agreement Analysis
- » Factorial Designs
- » Blocking and Incorporating Center Points
- » Fractional Factorial Designs

**Textbook Recommendations:** [Elementary Statistics](#), 10th edition, by Mario F. Triola. Addison Wesley (2007). This is an older edition and is available on Amazon for under \$20. (The newest edition is \$175.)

[DOE Simplified](#), 3rd edition, by Mark J. Anderson and Patrick J. Whitcomb. Productivity Press (2015). About \$64 on Amazon.