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.
### 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
- 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.)