



Six Sigma Black Belt Boot Camp Certificate

The Six Sigma Black Belt Boot Camp program is an in-depth, interactive learning experience held exclusively in a classroom setting. Our Six Sigma program is based on a case study approach so that participants apply training directly to a real-world example. Entry into the Black Belt program requires completion of Six Sigma training to the Green Belt level, or instructor waiver.

The program is structured in two on-site classroom sessions in the following way:

Week One		
Dates	Topics	Tools
Monday	<ol style="list-style-type: none"> 1. Review of GB: Processes, Systems, Improvement Methodologies and Data Based Decisions 2. Understanding Data and Variation – Advanced Topics in probability distributions and variation 3. Identifying, Understanding and Managing Risk 	<ul style="list-style-type: none"> • Basic Probability and Statistics • Failure Mode Effects Analysis (FMEA)
Tuesday	<ol style="list-style-type: none"> 4. Review of Families Of Variation 5. Identifying the Voice of the Customer (VOC) 6. Basic Customer Needs Analysis and Deployment 	<ul style="list-style-type: none"> • FOV Tree • VOC Tools • Kano Analysis • Basic Quality Function Deployment (QFD)
Wednesday	<ol style="list-style-type: none"> 7. Advanced topics in Measurement Validation 8. Advanced topics in SPC 9. Advanced topics in Capability: Distribution Identification 	<ul style="list-style-type: none"> • Attribute and Variable MSA • SPC Charts <ul style="list-style-type: none"> ○ Continuous <ul style="list-style-type: none"> ▪ Normal and Non-Normal ○ Attribute
Thursday	<ol style="list-style-type: none"> 10. Introduction to statistical testing <ol style="list-style-type: none"> a. Identifying relationships - making inferences based on data: 11. The Comparative Hypothesis Testing methodology (Continuous Responses) <ol style="list-style-type: none"> b. Testing Shape c. Testing Spread d. Testing Center 	<ul style="list-style-type: none"> • Comparative Hypothesis Tests <ul style="list-style-type: none"> ○ Shape Tests ○ Student-t Tests ○ Tests for Variance ○ ANOVA ○ Non-Parametric Tests

Friday	12. The Comparative Hypothesis Testing methodology (Attribute Responses) e. Proportions Testing f. Comparing Attribute Variables	<ul style="list-style-type: none"> • Proportions Tests • Chi Square Tests
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Week Two		
Dates	Topics	Tools
Monday	1. Review of Hypothesis Testing 2. Identifying relationships - making inferences based on data: <ul style="list-style-type: none"> a. Correlation b. Regression 	<ul style="list-style-type: none"> • ANOVA (Review) • Regression Analysis
Tuesday	3. Exploiting system relationships - Experimenting on the system 4. Fundamentals of Design of Experiments (DOE) <ul style="list-style-type: none"> a. Basic Full Factorial Design 5. Summary and Close	<ul style="list-style-type: none"> • DOE Methods <ul style="list-style-type: none"> ○ 2^k Full Factor Designs ○ Statistical considerations
Wednesday	6. The Design of Experiments (DOE) Methodology <ul style="list-style-type: none"> a. Screening b. Characterization c. Optimization 	<ul style="list-style-type: none"> • DOE Methods <ul style="list-style-type: none"> ○ Fractional Factorials ○ Response Surface Methods
Thursday	7. Data Based Simulation Part 1: Planning the Study 8. Data Based Simulation Part 2: Identifying Relationships 9. Full Data Based Simulation Part 3: Defining Direction and Closure	<ul style="list-style-type: none"> • Practicum
Friday	10. Exam	<ul style="list-style-type: none"> • Written Exam

Notes:

1. A laptop computer is required for this training.
2. **The student will need to download the trial version of Minitab prior to coming to the training session (<http://www.minitab.com/en-us/products/minitab/free-trial/>)**
3. This agenda is flexible. Instructor led modules may shift as necessary based on class needs and focus.
4. Case Studies and Simulations will be used throughout the program to enhance learning