

MASTER BLACK BELT (MBB) Training & Certification



AIT

Business Solutions

Master Black Belt Training & Certification Overview

Objectives	Methodology	Deliverables
<ul style="list-style-type: none"> Enable the MBB to provide Six Sigma training and coaching Develop the MBB to be a change agent within the organization Provide expert resources to support self-sustaining Six Sigma program Create customized materials for future internal training efforts 	<ul style="list-style-type: none"> Trained to develop a deeper understanding of fundamental Six Sigma tools Training and facilitation practice is built into all five sessions Candidates develop material for future internal training demonstrating expert abilities 	<ul style="list-style-type: none"> Establishment of internal expert to lead future deployment work Creation of customized materials Candidate certified by demonstrating execution on a project, presented to and reviewed by a board

The Master Black Belt is the highest level of mastery of the tools, techniques, and concepts associated with Six Sigma. The Master Black Belt operates as the internal quality consultant, coaches teams, provides tutorials, and facilitates meetings with both project teams and executives.

The AIT Master Black Belt Certification provides resources with the necessary technical and strategic skills to assist the executive leadership team with their Six Sigma responsibilities.

During the first four MBB Training sessions, candidates will practice teach the AIT Black Belt Curricula while receiving detailed coaching from the AIT MBB. Candidates will also be taught new advanced modules to further deepen their Six Sigma skill sets.

Master Black Belt Course Content

The Structure of Each Week

Deep Understanding Topics from Black Belt:
The Master Black Belt must have complete confidence with the topics of Six Sigma continuous improvement. To learn a topic, one must be prepared to teach it. So, in each of the first four weeks, the candidates will teach these topics to each other. We take a deep dive into understanding the topics so the candidate has mastery of the subject.

New Topics for Master Black Belt:
The Master Black Belt must have additional tools at the ready for situations involving the greatest challenges of continuous improvement. These challenges can be statistical, and they can be organizational. The new topics will grow the candidate's capabilities.

Week 1

Week One introduces the candidates to adult learning styles and training techniques. Candidates teach Black Belt modules and receive real-time feedback on technical knowledge and teaching ability. Practical, graphical, and analytical application of each tool is discussed in detail.

Deep Understanding Topics from Black Belt:
Introduction to Six Sigma Introduction to Variation
SIPOC Thought Process Mapping
Process Mapping Failure Modes and Effects Analysis
Numerical Evaluation of Metrics Measurement System Evaluation

New Topics for Master Black Belt:
Message Map Presentation Skills Review

Week 2

Week Two reinforces making decisions based on data. The candidate will achieve a deeper understanding of statistics as it applies to process improvement situations.

Deep Understanding Topics from Black Belt:
Hypothesis Testing Sample Size
Distributions Components of Variation (COV)
Analysis of Variance (ANOVA) Process Capability
Regression Residuals

New Topics for Master Black Belt:
Advanced ANOVA Advanced Regression

Week 3

Week Three covers experimental design in depth, understanding analysis and the practical applications of this powerful tool. Candidates will work on homework designed to enhance their knowledge of the toolset and practice teach the material to continue to develop that ability.

Deep Understanding Topics from Black Belt:
Philosophy and Concepts of DOE Pooling
Aliasing Blocking
Fully Nested ANOVA Minitab Training
Center Points Replication

New Topics for Master Black Belt:
Experimental Situations Black Box Simulation

Week 4

Week Four focuses on process modeling and control strategies. Tools are provided for unusual situations involving attribute data or limitations on experiments. The role of Master Black Belt is reinforced with skills for working with teams and managers.

Deep Understanding Topics from Black Belt:
Improvement Approaches Control Strategies
Restrictions on Randomization Factor Relationship Diagrams
Attribute Hypothesis Tests Attribute Regression
Experimentation with Attribute Data Rank Transformation
Time Series and Autocorrelation Mixture DoE

New Topics for Master Black Belt:

Week 5

Week Five tests one of the attributes of a great Master Black Belt, which is the ability to take a highly complex topic and explain it in a layperson's terms. Candidates will teach to their classmates one of the Black Belt modules by using only flip charts or a white board. Further, each candidate will deliver a Black Belt module of their own creation. Resources from the internet, text books, and Minitab may be used.

New Topics for Master Black Belt:
Response Surface Methodology Shift and Drift
Allocating Variation Case Study

The final session enables development of individual Master Black Belt candidate mastery. This session focuses on more advanced modules and "Mastery Reviews". The Mastery Reviews enable instructors to become self sufficient to train without presentation aids. Once the candidate has mastered the Mastery Reviews the candidate will have the capability to teach any topic without prepared material. In the fifth session, candidates present an advanced module they have researched and prepared. All this is combined with coaching and mentoring by the AIT MBB instructor. After the training and project is completed a board of three Master Black Belts convene to review the candidate's qualifications for certification.



"The MBB training deepened my understanding and insight into the complexities of statistical analysis. Because the AIT staff has such a diverse background, they were able to provide real life application and case studies of these new principles, which greatly enriched the learning process."

**— Jerry Schmidt, Plant Manager
The Tech Group Inc.**

For more information on
AIT Master Black Belt Training visit

[http://www.AITBusinessSolutions.com/
contact-us.html](http://www.AITBusinessSolutions.com/contact-us.html)

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