



Continuous Improvement Toolkit

World-Class Performance Tools for Business and

A3 . LEAN . SIX SIGMA . KAIZEN . STATISTICS . PDCA .

MINITAB . 5S

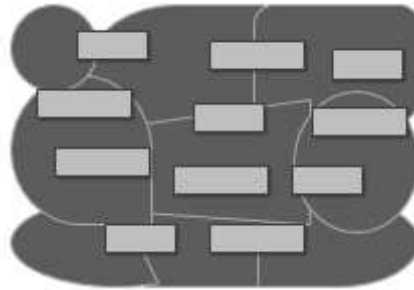
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Six Sigma Black Belt Certification Guide

A Lean Six Sigma Black Belt

is a professional who can initiate and implement large-scale and cross-functional Lean Six Sigma projects. He or she should

know how to apply advanced techniques and statistical methods. He or she should demonstrate team leadership, understand the various team dynamics, and should have the ability to teach and mentor Green and Yellow Belts. A Six Sigma Black Belt should demonstrate understanding and competence in using the tools illustrated in the following map:



- Six Sigma impact on stakeholders.
- Customer and financial measures.
- Hard cost measures and soft cost benefits.
- Team types and constraints.
- Team roles and responsibilities.
- Selection of team members.
- Elements necessary for successful teams.
- Team motivation.
- Team communication.
- Stages of team development.
- Team leadership models.
- Conflict resolution techniques.
- Meeting management.
- Team decision making methods.
- Implement an effective training.
- Effective training delivery.
- Training evaluation techniques.
- Business case justification.
- Project problem statement.
- Periodic project charter review.
- Qualitative and quantitative data.
- Continuous and discrete data.
- Measurement scales.
- Measurement systems across the organization.
- Metrology.
- Population parameters and sample statistics.
- Central limit theorem.
- Valid statistical conclusions.
- Capability studies.
- Process capability for attribute data and non-normal data.
- Transformation techniques.
- Process performance vs. specification.

- Short-term vs. long-term capability.
- Correlation and causation.
- Statistical vs. practical significance.
- Point and interval estimates.
- Tests of means, variances and proportions.
- Developing plans to implement improvements.
- Evaluate results to select the optimum solution.
- Rational subgrouping.
- Common and special causes.
- Training for process owners and staff.
- Ongoing evaluation of the improved process and continuing process measurement.

For more information about how to prepare for the exam and how to apply for the certification, visit the official [Black Belt](#) webpage on the American Society for Quality website.