

# LEAN SIX SIGMA BLACK BELT

## LEAN + SIX SIGMA

### Two Powerful Initiatives, One Integrated Program

Dramatically improve cost, quality, and delivery by combining the strengths of two powerful business process improvement initiatives through the systematic approach of the TMAC Lean Six Sigma (LSS) program.

Integrated into the Define, Measure, Analyze, Improve, Control (DMAIC) project management structure, Lean + Six Sigma results are impactful, robust, and sustainable.

Expect to be immersed in a hybrid learning environment of instruction, group exercises, hands-on simulations, teach-backs, project presentations and review of industry case studies. Experienced instructors emphasize practical application of tools and share lessons learned from hundreds of completed projects.

Earn your LSS BB certification by completing the course and applying what you've learned on a project according to the TMAC certification guidelines.

The Texas Manufacturing Assistance Center (TMAC) accelerates the profitable growth of manufacturers by implementing methods, innovation, technology and best practices to develop and improve products, processes and people. TMAC South Central Region operates out of Southwest Research Institute (SwRI) in San Antonio, TX. TMAC is an affiliate of the Manufacturing Extension Partnership (MEP) program of the National Institute of Standards and Technology (NIST).

## LEARNING DOESN'T STOP ONCE TRAINING IS OVER

Participants can access TMAC LSS Master Black Belts before, during, and after training for coaching to rapidly apply what they learn.

## ENGAGE WITH MORE THAN 35 LSS TOOLS

See back for full list.

## IMPACT OF \$150,000 PER YEAR

TMAC Black Belts experience a median financial impact of \$150,000 per year.



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# MODULES

## LEAN PROCESS FLOW

5s Workplace Organization  
ABC Stratification  
Analytical Batch Sizing  
Kaizen Rapid Improvement Events  
Mistake Proofing  
Process Constraint Analysis  
Pull Systems and Kanbans (Generic and Replenishment)  
Rolled Throughput Yield  
Setup Reduction (SMED)  
Stocking Strategy  
The Value of Speed  
Total Productive Maintenance (TPM)  
Value Stream Mapping  
Visual Process Control Tools  
Work Simplification

## PROJECT AND TEAM TOOLS

Evaluating Alternative Solutions (AHP, Pugh Matrix)  
Failure Modes and Effects Analysis (FMEA)  
Piloting the Solution  
Process Control and Implementation Plans  
Project Charters  
Project Planning & Management  
Root Cause Tools (Fishbone, Pareto, C&E Matrix)  
Solution Generation and Selection  
Team Facilitation & Brainstorming Methods  
Voice of Customer (VOC) Analysis

## STATISTICAL ANALYSIS

Analysis of Variance (ANOVA—One and Two Way)  
Basic Statistics, Variation and Graphical Analysis  
Control Charts (Variable and Attribute)  
Data Collection and Sample Strategies  
Dealing with Non-Normally Distributed Data  
Design of Experiments (DOE)  
Hypothesis Testing (Continuous and Discrete)  
Process Capability (Continuous and Attribute)  
Regression (Simple and Multiple)  
Statistical Process Control (SPC)

## INCLUDED

Multiple LSS References:  
Guide books, Pocket Tool-  
books and Binders of the  
weekly slides.

Access to TMAC LSS Master  
Black Belts before, during  
and after training for:

- Project chartering
- Project coaching
- Tool selection and interpre-  
tation of results
- Review of project docu-  
mentation for certification

## REQUIRED

Laptop computer with MS  
Excel and Minitab (with an  
active license).

Participants should come to  
the event with a defined  
problem description that is  
impacting the business. In-  
structors will assist partici-  
pants in completing a pro-  
ject charter.

## REGISTRATION

Week 1: April 8—12, 2019  
Week 2: May 6—10, 2019  
Week 3: June 3—7, 2019  
Week 4: July 8—12, 2019  
Cost: \$9,900 per participant  
(group discounts available)  
Location: San Antonio, TX

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