



Design for Lean Six Sigma (DFLSS)

An ounce of prevention is worth a pound of cure

COURSE OVERVIEW

Design for Lean Six Sigma (DFLSS) is a powerful methodology for ensuring the quality and reliability of new product and process designs in any environment (manufacturing, services, financial, healthcare, research). Unlike other courses, this course uniquely combines the best knowhow for developing efficient and waste-free designs (the Lean aspect), as well as those that are defect and error-free (the Six Sigma aspect).

This course begins with the idea that design is a truly cross-functional undertaking, not the sole responsibility of the product development function. While statistical design tools are an integral part of this course, the importance of VOC (voice of the customer), financial analysis and supplier selection is also emphasized.

The course includes an introduction to the DMADV (Define-Measure-Analyze-Design-Verify) methodology used by DFLSS practitioners. In addition, students learn key Lean and innovation tools that aid in the design process. Plus, the tools learned can be applied to any process any time in any environment—so they are very robust in this regard.

Like all BMGI courses, this course has an applied focus. Participants bring their unique challenges and data sets to the workshop so they can make progress toward their particular goals. The DFLSS course often enables participants to solve previously unsolvable problems in their organizations.

LEARNING OBJECTIVES

Upon completion of this course, participants will be able to:

- Understand how design for Lean and Design for Six Sigma overlap and when to emphasize either, or both.
- Use DMADV, Lean and Innovation methodologies to complete new product and process development projects.
- Discern between DMADV and DMAIC project opportunities.
- Describe the objectives of each DMADV phase.
- Complete a project financial and risk analyses.
- Analyze a Quality Function Deployment.
- Select concepts based on a Pugh Matrix.
- Complete a design scorecard.
- Design and analyze a robust designed experiment.
- Describe the elements of a process and the transactional roadmap.
- Predict output variability using techniques such as Monte Carlo simulations.
- Analyze reliability data.
- Predict service levels based on resource decisions.
- Describe the principles of Design for Manufacturer and Assembly
- Define inventory policies based on desired service levels.
- Select appropriate maintenance strategies for products.

I had hit a wall with DMAIC... with DFLSS I now have a new arsenal of new tools for breakthrough.

Dean Kounelis - *Master Black Belt, Siemens VDO Automotive*



APPROPRIATE FOR

- ▶ Product development and R&D professionals
- ▶ Candidates in BMGI's Master Black Belt Development program
- ▶ Six Sigma green belts, black belts and Lean project leaders.

COURSE AT A GLANCE

Prerequisites

Classroom: Laptop computer running Minitab and Microsoft Excel

Basic understanding of statistics

Course Length

Classroom: 5 consecutive days

Cost

Classroom:  \$ 2,745

 € 2,475 (Exclusive of VAT)

 \$ 2,400

 \$ 1,825

\$ 1,620

HOW YOU WILL LEARN IT

Classroom

You'll learn about the details of DFLSS in a focused workshop environment—complete with interactive lectures, group exercises, dynamic simulations and individualized mentoring on real, problematic data sets and projects that students bring to class from their organizations.

BMGI expert instructors are interesting and engaging, transferring knowledge from a thorough and deep set of course content—always challenging participants to extract the most value from their experience.

In addition, course content and examples are tailored to the composition of each class—teaching



Design for Lean Six Sigma (DFLSS)

more transactional concepts and practices to bankers, or leading a factory-based simulation for a group of students from a steel mill. In any case, the instructor will deviate from the standard curriculum when necessary to meet the individual needs of participants.

Finally, portions of the workshop are dedicated to facilitating peer-to-peer learning as professionals share their unique perspectives, problems, projects, data and experience.

Classroom Agenda

DAY ONE

- DFLSS Overview
- Product and Process Design Methodology
- Project Risk Analysis
- Design Financial Analysis

DAY TWO

- Job To Be Done
- Outcome Expectations
- Translating Needs into Design
- Generating Innovative Concepts

DAY THREE

- Concept Selection (Pugh Matrix)
- Lean Design Principles
- Mistake Proofing

DAY FOUR

- Robust Design
- Tolerance Design
- Flow
- Design FMEA

DAY FIVE

- Prototyping and Piloting
- Synchronization and Lean
- Getting Started with DFLSS

Prefer customized training at your location?

CALL for details > +1 303-827-0010