



Lean Six Sigma for Production Operations “Improve”

3 Days

Audience and Purpose:

This course is designed for those individuals working directly on Six Sigma projects and serving as Black Belts or Green Belts. It is assumed they come from a variety of backgrounds and disciplines and will be working on a variety of projects across the company. Tools and examples are in direct support of manufacturing and production operations.

Course Objectives:

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

1. Design appropriate experiments for characterization, optimization and validation using JMP
2. Brainstorm solution sets associated with problem root cause(s)
3. Determine associated effectiveness, costs and complexity of solutions
4. Prioritize solutions
5. Determine solution risks and associated action plans
6. Validate the effectiveness of the solution
7. Implement short term and long term solutions
8. Validate improvements using key metrics

Course Outline:

Section I

Design and Analysis of Experiments

Introduction to DOE and robust design principles
Experimental Preparation
Full factorial designs
Screening designs
Taguchi designs (optional)
Custom designs
Optimization designs
Mixture designs (optional)

Section II

Determine Breakthrough Solutions, Cost and Benefits

Creative problem solving for achieving breakthroughs
Brainstorm potential breakthrough solutions
Sort out long term versus short term solutions
Assign costs and benefits to each potential solution



- Section III** **Assess Solution Risks**
Failure Modes and Effect Analysis
Risk Assessment Matrix

- Section IV** **Validate Solution Using a Pilot**
Plan the Pilot
Run the Pilot and Collect Data
Summarize results of the pilot

- Section V** **Implementation Solution**
Develop an implementation plan
Implement and monitor the solution

- Section VI** **Measure Solution Effectiveness**
Measuring improvement impact with project metrics
Linking improvements to financial performance and customer satisfaction

- Section VII** **Rapid DOE using iGrafx**
Experimenting with process variables
Evidence of improvement