€TRAINING

# ASQ Approved Lean Six Sigma Green Belt



# ASQ Approved Lean Six Sigma Green Belt

## Introduction:

The Six Sigma methodology is a systematic application, focused on achieving significant financial results and increasing customer satisfaction. When properly deployed on carefully selected business projects, this methodology can lead to a significant reduction, and in many cases elimination, of defects, process waste and out-of-control processes which translate into dramatic business gains.

Various exercises and a full case study will be used to direct and illustrate the implementation of a project. Learned skills are practiced and applied through individual and team exercises as well as individual projects. Participants will be able to apply the concepts learned in the course to a business improvement project assigned to them by their management sponsor. Games and discussions will be used to enrich course delivery.

## Course Objectives:

At the end of this course the participants will be able to:

- Develop the Six Sigma methodology and apply its roadmap.
- Apply the principles of the Six Sigma 'DMAIC' performance improvement model.
- Examine in detail the various elements of building a complete project for improvement.
- Develop statistical hypotheses using simple statistical tools.
- Use quantifiable tools to solve problems related to an improvement project.
- Eliminate waste and defects by applying Lean and Six Sigma.
- Collect, analyze, and quantify data that enable process improvements.
- Employ statistical analysis using statistical tools and software.

## Targeted Audience:

Individuals from all organization departments including finance, quality and business operations staff functions as well as those who have direct intervention as process owners or stakeholders.

## Course Outlines:

## Unit 1: Six Sigma Overview:

- History and origins.
- Why Six Sigma?.
- Cost of poor quality.
- Project details.

## Unit 2: Define phase: Tools and Methods:

- Charter the improvement project.
- Define the scope.
- Six Sigma project. definition.

- Project selection process.
- Voice of Customer VOC and Critical to Quality CTQ.
- Kano model analysis.
- Team development phases.
- Communication plan.
- Project planning and management.

## Unit 3: Measure Phase: Introduction and Tools:

- Types of data.
- Computing 'DPMO' and sigma levels.
- Process mapping..
- 'FMEAs' and cause and effect.
- Graphical analysis.
- Analysis of Variance ANOVA and multi-plot diagrams.
- Chi-square analysis.
- Histograms.
- Measurement systems analysis: gauge R&R.
- Sampling techniques.
- Introduction to Minitab and 'QIMacro' software

## Unit 4: Analyze Phase: Introduction and Tools:

- Probability and basic statistics.
- Control charts and stability.
- Data normality.
- Process capability, 'Cp', and 'CpK'.

## Unit 5: Improve Phase: Introduction and Tools:

- Piloting and implementation.
- Introduction to lean enterprise.
- Types of waste.
- Lean tools.
- '5S' program.
- Value stream mapping.
- Lean and Kaizen.

## Unit 6: Control Phase: Introduction and Tools:

- Statistical process control.
- Standardization and documentation.
- Control plans.
- Mistake proofing.

## Unit 7: Green Belt Project and Tollgate Review:

- Project charter submission.
- Tollgate questions.
- Tips and tricks to get your project started.