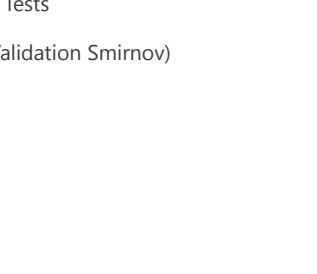




Certified Lean Six Sigma Black Belt (CLSSBB)™

Course Outline & Module Information

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What Modules are covered?

Section I – Organizational Roadblocks

- 1) Organizational roadblocks
- 2) Resistance Analysis
- 3) Overview of all Continuous Improvement approaches
- 4) Overview of Lean
- 5) Overview of Six Sigma
- 6) Lean Management explained
- 7) Lean Tools explained — 5S, Kaizen, SMED, Heijunka

Section II – Pre-define DMAIC and Define

Pre-define

- 1) DMAIC versus DFSS
- 2) Pre-define Pre-requisites and Qualifications
- 3) Project Prioritization Matrix
- 4) Introduction to Enterprise Wide view versus LOB view
- 5) NPV and IRR

Define

- 1) Champion's transfer of project
- 2) Team dynamics and facilitation
- 3) Project Charter's role
- 4) SIPOC/COPIS map
- 5) VOC/VOB/VOP
- 6) CTQ, CTC, CTS
- 7) VOC – CTQ Tree
- 8) Kano Model
- 9) Quality Function Deployment
- 10) Baseline performance of Y
- 11) Business Metrics for Y
- 12) Rolled Throughput Yield (RTY)
- 13) Statistical Definition of Six Sigma

Section III – Measure

- 1) Objectives of Measure Phase
- 2) Types of Data and Data Distribution models
- 3) Scales of Data
- 4) Measures of Central Tendency
- 5) Measures of Dispersion
- 6) Measurement Systems Analysis
- 7) Variables GAGE RR
- 8) Attribute RR
- 9) Stability Check — Importance of Stability
- 10) Capability Check — Cp, Cpk, Cpkp explained
- 11) Variations, Variability and Capability
- 12) Graphical tools to understand Data distribution
- 13) Understanding Weibull
- 14) Correlating Calculations to Business Measures
- 15) Checking Normality of Data

Section IV – Analyze

- 1) Objectives of Analyze
- 2) Simple Linear Regression
- 3) Multiple Linear Regression
- 4) Curvilinear Regression
- 5) Fishbone Diagram
- 6) Pareto Charts
- 7) Demarcating Common Causes
- 8) Hypothesis Tests
- 9) Statistical Validation Smirnov)

Section V – Improve

- 1) Objectives of Improve
- 2) Cost Benefit Analysis
- 3) Solutions Prioritization Matrix
- 4) Pugh Matrix
- 5) Design of Experiments
- 6) Introduction to DOE
- 7) Basics of DOE
- 8) Replication, Randomization and Blocking
- 9) Main Effects and Interaction effects
- 10) Full factorial experiments
- 11) Fractional factorial experiments
- 12) Screened Designs
- 13) Response Surface Designs
- 14) DOE with Regression
- 15) DOE with example

Lean Process Improvement

- 1) Understanding Lean
- 2) The Toyota Production System
- 3) The Toyota Production System House
- 4) The Five Critical Improvement Concepts
- 5) Understanding Value with the Kano Model
- 6) Types of Waste
- 7) Creating a Lean Enterprise
- 8) Understanding Lean
- 9) The Plan, Do, Study, Act (PDSA) Cycle
- 10) Using the R-DMAIC-S Model
- 11) Lean Thinking Tools
- 12) Kaizen Events
- 13) Data Gathering and Mapping

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What Modules are covered in the E-Course?

- 1) Pre-define DMAIC and Define
- 2) Organizational roadblocks
- 3) Resistance Analysis
- 4) Overview of all Continuous Improvement approaches
- 5) Lean Management explained . TAKT Time, Cycle Time, PCE, Lead Time, SWIP, Setup time, Changeover time
- 6) Lean Tools explained . 5S, Kaizen, SMED, Heijunka
- 7) DMAIC versus DFSS
- 8) Pre-define Pre-requisites and Qualifications
- 9) Project Prioritization Matrix
- 10) Introduction to Enterprise Wide view versus LOB view
- 11) NPV and IRR
- 12) Objectives of Measure Phase
- 13) Types of Data and Data Distribution models (Normal, Binomial and Poisson Distribution discussed)
- 14) Scales of Data
- 15) Measures of Central Tendency
- 16) Measures of Dispersion
- 17) Measurement Systems Analysis
- 18) Variables GAGE RR
- 19) Attribute RR
- 20) Stability Check . Importance of Stability
- 21) Capability Check . Cp, Cpk, Cpkp explained, How to understand Attribute Capability
- 22) Variations, Variability and Capability
- 23) Graphical tools to understand Data distribution
- 24) Understanding Weibull (2 Parameter, 3 Parameter and Rayleigh) Distribution
- 25) Correlating Calculations to Business Measures
- 26) Checking Normality of Data (Anderson Darling, Ryan Joiner and Kolmogorov Smirnov)
- 27) Objectives of Analyze
- 28) Simple Linear Regression
- 29) Multiple Linear Regression
- 30) Curvilinear Regression
- 31) Fishbone Diagram
- 32) Pareto Charts
- 33) Demarcating Common Causes and Special Causes
- 34) Hypothesis Tests (Parametric and Non-Parametric tests)
- 35) Statistical Validation
- 36) Objectives of Improve
- 37) Cost Benefit Analysis
- 38) Solutions Prioritization Matrix
- 39) Pugh Matrix
- 40) Design of Experiments
- 41) Introduction to DOE
- 42) Basics of DOE
- 43) Replication, Randomization and Blocking
- 44) Main Effects and Interaction effects
- 45) Full factorial experiments
- 46) Fractional factorial experiments
- 47) Screened Designs
- 48) Response Surface Designs
- 49) DOE with Regression
- 50) DOE with example
- 51) Taguchi's Loss Function
- 52) Control Charts (Variable Control Charts and Attribute Control Charts)
- 53) Measurement System Re-analysis
- 54) Control Plan and Project Storyboard Transfer
- 55) Project Closure
- 56) Introduction to Total Productive Maintenance
- 57) Understanding Lean
- 58) The Toyota Production System
- 59) The Toyota Production System House
- 60) The Five Critical Improvement Concepts
- 61) Understanding Value with the Kano Model
- 62) Types of Waste
- 63) Creating a Lean Enterprise
- 64) Understanding Lean
- 65) The Plan, Do, Study, Act (PDSA) Cycle
- 66) Using the R-DMAIC-S Model

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