

1. Fundamentals of Process Improvement
2. General History of Lean Six Sigma
3. Principles of Lean and Six Sigma
4. Voice of the Customer, and Business
5. Lean Six Sigma Belt Roles
6. Defining a Process
7. Inputs and Outputs
8. The 8 Elements of Waste
9. 5S
10. Critical to Quality (CTQs)
11. SIPOC
12. Process Mapping
13. Value Stream Mapping
14. Flow and Bottle-necks
15. Single-Piece-Flow
16. Poka-Yoke (Mistake Proofing)
17. SMED (Quick Change Over)
18. PULL and Just-in-Time
19. Kanban
20. Visual Management
21. Standardised Work
22. Kaizen and Kaizen Events
23. PDCA
24. Root Cause Analysis
25. Cause & Effect / Fishbone Diagrams
26. Pareto Principle / Pareto Charts
27. Lean Six Sigma Projects
28. DMAIC basics



29. Define Phase of DMAIC
30. A3 Reports
31. Measure Phase of DMAIC
32. Failure Mode & Effects Analysis (FMEA)
33. Six Sigma Statistics
34. Use of Excel, Minitab or SigmaXL
35. Descriptive Statistics
36. Different Types of Data
37. Normal Distributions & Normality
38. Graphical Analysis
39. Histograms
40. Box Plots
41. Run Charts
42. Measurement System Analysis
43. Precision & Accuracy
44. Bias, Linearity & Stability
45. Gage Repeatability & Reproducibility
46. Variable & Attribute MSA
47. Process Capability
48. Capability Analysis, Cp, Cpk, Pp, Ppk
49. Long term vs Short term Variation
50. Analyze Phase of DMAIC
51.  $Y=f(x)$
52. Scatter Plots and Correlation
53. Correlation Coefficients
54. Simple Linear Regression
55. Regression Equations
56. Multiple Linear Regression
57. Non-Linear Regression
58. Confidence and Prediction Intervals
59. Hypothesis Testing basics
60. Hypothesis Testing Uses
61. Practical vs. Statistical Significance
62. Alpha & Beta Risk
63. p-values
64. Types of Hypothesis Test
65. T-tests
66. Designed Experiments DOE
67. OFAT
68. Full Factorial Experiments
69. Full Factorial Designs
70. Improve Phase of DMAIC
71. Implementation Plans
72. Control Phase of DMAIC
73. Control Plans
74. Statistical Process Control (SPC)
75. 7Data Collection for SPC
76. Types of Control Charts
77. Tests for Special Cause Variation



78. Roles and Responsibilities of a Black Belt
79. Portfolio Management - Programme Management
80. Design for Six Sigma ( DFSS )
81. Hoshin Kanri / Strategic Planning
82. Inferential Statistics
83. Central Limit Theorem
84. Normality Testing
85. Standard Error of the Mean
86. Sampling Techniques
87. Sample Size calculation
88. Confidence & Prediction Intervals
89. Hypothesis Testing with Non-Normal Data
90. Non-parametric hypothesis tests (names and applications)
91. One and Two Sample Proportion
92. Chi-Squared (Contingency Tables)
93. Non- Linear Regression
94. Multiple Linear Regression
95. Advanced uses of Stats Software ( such as Minitab, SigmaXL)
96. DOE Design Choices
97. Full Factorial Experiments
98. Fractional Factorial Experiments
99. Taguchi Orthogonal Designs
100. Binomial and Poisson Distribution and Calculations



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