

Lean Six Sigma Black Belt Curriculum	Lean Six Sigma Green Belt Curriculum	Lean Six Sigma Green Belt Curriculum	Lean Six Sigma Yellow Belt Curriculum
1.0 DEFINE 1.1 Six Sigma Overview 1.1.1 What is Six Sigma 1.1.2 Six Sigma History 1.1.3 Six Sigma Approach $Y = f(x)$ 1.1.4 Six Sigma Methodology 1.1.5 Roles & Responsibilities 1.2 The Fundamentals of Six Sigma 1.2.1 Defining a Process 1.2.2 VOC & CTQ's 1.2.3 QFD 1.2.4 Cost of Poor Quality (COPQ) 1.2.5 Pareto Analysis (80:20 rule) 1.3 Lean Six Sigma Projects 1.3.1 Six Sigma Metrics 1.3.2 Business Case & Charter 1.3.3 Project Team Selection 1.3.4 Project Risk Management 1.3.5 Project Planning 1.4 Lean Fundamentals 1.4.1 Lean & Six Sigma 1.4.2 History of Lean 1.4.3 The Seven Deadly Muda 1.4.4 Five-S (5S) Define Phase Test 2.0 MEASURE 2.1 Process Definition 2.1.1 Cause & Effect Diagrams 2.1.2 Cause & Effects Matrix 2.1.3 Process Mapping 2.1.4 FMEA: Failure Modes & Effects Analysis 2.1.5 Theory of Constraints 2.2 Six Sigma Statistics 2.2.1 Basic Statistics 2.2.2 Descriptive Statistics 2.2.3 Distributions & Normality 2.2.4 Graphical Analysis 2.3 Measurement System Analysis 2.3.1 Precision & Accuracy 2.3.2 Bias, Linearity & Stability 2.3.3 Gage R&R 2.3.4 Variable & Attribute MSA 2.4 Process Capability 2.4.1 Capability Analysis 2.4.2 Concept of Stability 2.4.3 Attribute & Discrete Capability 2.4.4 Monitoring Techniques Measure Phase Test 3.0 ANALYZE 3.1 Patterns of Variation 3.1.1 Multi-Vari Analysis 3.1.2 Classes of Distributions 3.2 Inferential Statistics 3.2.1 Understanding Inference 3.2.2 Sampling Techniques & Uses 3.2.3 Sample Size 3.2.4 Central Limit Theorem 3.3 Hypothesis Testing 3.3.1 Goals of Hypothesis Testing 3.3.2 Statistical Significance 3.3.3 Risk; Alpha & Beta 3.3.4 Types of Hypothesis Test 3.4 Hypothesis Testing: Normal Data 3.4.1 1 & 2 sample t-tests 3.4.2 1 sample variance 3.4.3 One Way ANOVA 3.5 Hyp Testing: Non-Normal Data 3.5.1 Mann-Whitney & Mood's Median 3.5.2 Kruskal-Wallis 3.5.3 Moods Median 3.5.4 Friedman 3.5.5 1 Sample Sign 3.5.6 1 Sample Wilcoxon 3.5.7 1 and 2 Sample Proportion 3.5.8 Chi-Squared (Contingency Tables) 3.5.9 Test of Equal Variances Analyze Phase Test	4.0 IMPROVE 4.1 Simple Linear Regression 4.1.1 Correlation 4.1.2 X-Y Diagram 4.1.3 Regression Equations 4.1.4 Residuals Analysis 4.2 Multiple Regression Analysis 4.2.1 Non-Linear Regression 4.2.2 Multiple Linear Regression 4.2.3 Confidence Intervals 4.2.4 Residuals Analysis 4.2.5 Data Transformation, Box Cox 4.2.6 Stepwise Regression 4.2.7 Logistic Regression 4.3 Designed Experiments 4.3.1 Experiment Objectives 4.3.2 Experimental Methods 4.3.3 DOE Design Considerations 4.4 Full Factorial Experiments 4.4.1 2k Full Factorial Designs 4.4.2 Linear & Quadratic Models 4.4.3 Balanced & Orthogonal Designs 4.4.4 Fit, Model & Center Points 4.5 Fractional Factorial Experiments 4.5.1 Designs 4.5.2 Confounding Effects 4.5.3 Experimental Resolution Improve Phase Test 5.0 CONTROL 5.1 Lean Controls 5.1.1 Control Methods for 5S 5.1.2 Kanban 5.1.3 Poka-Yoke (Mistake Proofing) 5.2 Statistical Process Control (SPC) 5.2.1 Data Collection for SPC 5.2.2 I-MR Chart 5.2.3 Xbar-R Chart 5.2.4 U Chart 5.2.5 P Chart 5.2.6 NP Chart 5.2.7 X-S chart 5.2.8 CumSum Chart 5.2.9 EWMA Chart 5.2.10 Control Methods 5.2.11 Control Chart Anatomy 5.2.12 Subgroups, Variation, Sampling 5.2.13 Center Line & Control Limits 5.3 Six Sigma Control Plans 5.3.1 Cost Benefit Analysis 5.3.2 Elements of the Control Plan 5.3.3 Elements of the Response Plan Control Phase Test Black Belt Certification Exam	1.0 DEFINE 1.1 Six Sigma Overview 1.1.1 What is Six Sigma 1.1.2 Six Sigma History 1.1.3 Six Sigma Approach $Y = f(x)$ 1.1.4 Six Sigma Methodology 1.1.5 Roles & Responsibilities 1.2 The Fundamentals of Six Sigma 1.2.1 Defining a Process 1.2.2 VOC & CTQ's 1.2.3 QFD 1.2.4 Cost of Poor Quality (COPQ) 1.2.5 Pareto Analysis (80:20 rule) 1.3 Lean Six Sigma Projects 1.3.1 Six Sigma Metrics 1.3.2 Business Case & Charter 1.3.3 Project Team Selection 1.3.4 Project Risk Management 1.3.5 Project Planning 1.4 Lean Fundamentals 1.4.1 Lean & Six Sigma 1.4.2 History of Lean 1.4.3 The Seven Deadly Muda 1.4.4 Five-S (5S) Define Phase Test 2.0 MEASURE 2.1 Process Definition 2.1.1 Cause & Effect Diagrams 2.1.2 Process Mapping 2.1.3 X-Y Diagram 2.1.4 FMEA: Failure Modes & Effects Analysis 2.1.5 Theory of Constraints 2.2 Six Sigma Statistics 2.2.1 Basic Statistics 2.2.2 Descriptive Statistics 2.2.3 Distributions & Normality 2.2.4 Graphical Analysis 2.3 Measurement System Analysis 2.3.1 Precision & Accuracy 2.3.2 Bias, Linearity & Stability 2.3.3 Gage R&R 2.3.4 Variable & Attribute MSA 2.4 Process Capability 2.4.1 Capability Analysis 2.4.2 Concept of Stability 2.4.3 Attribute & Discrete Capability 2.4.4 Monitoring Techniques Measure Phase Test 3.0 CONTROL 3.1 Lean Controls 3.1.1 Control Methods for 5S 3.1.2 Kanban 3.1.3 Poka-Yoke (Mistake Proofing) 3.2 Six Sigma Control Plans 3.2.1 Cost Benefit Analysis 3.2.2 Elements of the Control Plan 3.2.3 Elements of the Response Plan Control Phase Test Yellow Belt Certification Exam	3.0 ANALYZE 3.1 Inferential Statistics 3.1.1 Understanding Inference 3.1.2 Sampling Techniques & Uses 3.1.3 Sample Size 3.1.4 Central Limit Theorem 3.2 Hypothesis Testing 3.2.1 Goals of Hypothesis Testing 3.2.2 Statistical Significance 3.2.3 Risk; Alpha & Beta 3.2.4 Types of Hypothesis Test 3.3 Hypothesis Testing: Normal Data 3.3.1 1 & 2 sample t-tests 3.3.2 1 sample variance 3.3.3 One Way ANOVA 3.4 Hyp Testing: Non-Normal Data 3.4.1 Mann-Whitney & Mood's Median 3.4.2 Kruskal-Wallis 3.4.3 Moods Median 3.4.4 Friedman 3.4.5 1 Sample Sign 3.4.6 1 Sample Wilcoxon 3.4.7 1 and 2 Sample Proportion 3.4.8 Chi-Squared (Contingency Tables) 3.4.9 Test of Equal Variances Analyze Phase Test 4.0 IMPROVE 4.1 Simple Linear Regression 4.1.1 Correlation 4.1.2 X-Y Diagram 4.1.3 Regression Equations 4.1.4 Residuals Analysis 4.2 Multiple Regression Analysis 4.2.1 Non-Linear Regression 4.2.2 Descriptive Statistics 4.2.3 Confidence Intervals 4.2.4 Residuals Analysis Improve Phase Test 5.0 CONTROL 5.1 Lean Controls 5.1.1 Control Methods for 5S 5.1.2 Kanban 5.1.3 Poka-Yoke (Mistake Proofing) 5.2 Statistical Process Control (SPC) 5.2.1 Data Collection for SPC 5.2.2 I-MR Chart 5.2.3 Xbar-R Chart 5.2.4 U Chart 5.2.5 P Chart 5.2.6 NP Chart 5.2.7 X-S chart 5.2.8 CumSum Chart 5.2.9 EWMA Chart 5.2.10 Control Methods 5.2.11 Control Chart Anatomy 5.2.12 Subgroups, Variation, Sampling 5.2.13 Center Line & Control Limits 5.3 Six Sigma Control Plans 5.3.1 Cost Benefit Analysis 5.3.2 Elements of the Control Plan 5.3.3 Elements of the Response Plan Control Phase Test Green Belt Certification Exam