



CI360 Black Belt Body of Knowledge (BOK)

Module	Lesson	Topic	Remember	Understand	Apply	Analyze	Evaluate	Create	
Enterprise-Wide Deployment	Enterprise Wide View	History of Continuous Improvement	x						
		Value and Foundations of Lean		x					
		Value and Foundations of Six Sigma		x					
		Integration of Lean and Six Sigma		x					
		Business Processes and Systems		x					
	Application of Lean Six Sigma		x						
	Leadership	Lean Six Sigma Roles and Responsibilities		x					
		Organizational Roadblocks				x			
		Change Management				x			
		Six Sigma Projects and Kaizen Events				x			
Organizational Process Management and Measures	Stakeholder Awareness	Customers		x					
		Stakeholders		x					
		Suppliers		x					
	Critical to x Requirements	CTx Tree Diagram				x			
		x's: quality, cost, process, safety, delivery				x			
		Alignment with the Customer				x			
	Benchmarking	The Purpose of Benchmarking				x			
		Best Practices				x			
		Competitive vs Collaborative				x			
	Business Performance Measures	Balanced Scorecard				x			
		Key Process Indicators (KPI)				x			
		Customer Loyalty		x					
	Financial Measures	Revenue Growth				x			
		Margin				x			
		Market Share				x			
Return on Investment (ROI)					x				
Cost of Quality (COQ)					x				
Net Present Value (NPV)					x				
Building the Team	Team Management	Types of Teams			x				
		Team Roles		x					
		Team Member Selection			x				
		Launching a Team			x				
		Team Motivation			x				
		Team Stages			x				
		Coaching/Mentoring					x		
		Negative Team Dynamics					x		
		Intervention					x		
		Time Management Techniques				x			
	Milestones				x				
	Consensus Building Tools	Brainstorming Tools				x			
		Nominal Group Technique				x			
		Multi-Voting				x			
	Tools for Managing and Planning	Activity Network Diagrams				x			
		Affinity Diagrams				x			
		Interrelationship Digraphs				x			
		Matrix Diagrams				x			
		Prioritization Matrices				x			
		Process Decision Program Charts (PDPC)				x			
Team Performance Evaluation and Reward	Tree Diagram				x				
	Goal, Objective and Metric Review				x				
	Measuring Team Progress				x				
DEFINE	Voice of the Customer	Reward and Recognition			x				
		Customer Identification			x				
		Customer Feedback			x				
	Project Charter	Customer Requirements				x			
		Problem/Opportunity Statement						x	
		Project Scope				x			
		Charter Goals and Objectives				x			
	Project Planning Tools	Project Performance Measures				x			
		Gantt Charts							x
		Schedules							x
Toll-Gate Reviews							x		



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MEASURE	Process Characteristics	SIPOC					x	
		Process Flow Metrics					x	
		Process Analysis Tools				x		
	Data Collection	Types of Data					x	
		Measurement Scales			x			
		Sampling Methods					x	
		Data Collection				x		
	Measurement Systems	Measurement Methods		x				
		Measurement Systems Analysis (MSA)					x	
		Metrology		x				
	Basic Statistics	Basic Statistic Terms			x			
		Central Limit Theorem						x
		Descriptive Statistics					x	
		Graphical Methods					x	
		Valid Statistical Conclusions					x	
	Probability	Basic Probability Concepts			x			
		Probability Distributions					x	
		Other Probability Distributions			x			
	Process Capability	Process Capability Indices					x	
		Process Performance Indices					x	
		Short and Long Term Capability					x	
Process Capability for Non-Normal Data				x				
Process Capability for Attributes Data				x				
Capability Study						x		
Process Performance vs. Specification						x		
ANALYZE	Modeling Relationships	Correlation Coefficient						x
		Regression						x
		Multivariate tools				x		
		Multi-Vari Studies						x
		Attributes Data Analysis				x		
	Hypothesis Testing	Hypothesis Testing Terminology						x
		Statistical vs. Practical Significance						x
		Sample Size			x			
		Point and Interval Estimates					x	
		Tests for Means, Variation and Proportions					x	
		Analysis of Variance (ANOVA)					x	
		Chi Square					x	
		Contingency Tables					x	
	Non-Parametric Tests					x		
	Failure Modes Effects Analysis (FMEA)	Purpose of FMEA						x
		Risk Priority Number (RPN)						x
		Failure Modes Effects Analysis (FMEA)						x
		DFMEA						x
		PFMEA						x
	Additional Analysis Methods	Results for Process, Products and Services						x
		Gap Analysis				x		
Root Cause Analysis						x		
IMPROVE	Design of Experiments (DOE)	Waste Analysis				x		
		DOE Terminology		x				
		Design Principles			x			
		Planning Experiments					x	
		One-Factor Experiments					x	
		Two-Level Fractional Factorial Experiments					x	
	Kaizen	Full Factorial Experiments					x	
		5S					x	
		8 Types of Waste (DOWNTIME)					x	
		Kanban					x	
		Mistake Proofing					x	
		Pull Systems					x	
		Standard Work					x	
		Continuous Flow						x
		Kaizen					x	
	SMED						x	
	Implementation	Theory of Constraints (TOC)		x				
		Developing Implementation Plans						x
		Evaluating Results						x
		Pilot Tests						x
		Selecting Optimal Solutions						x
Simulation						x		



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IMPROVE	Risk Analysis and Mitigation	Consequential Metrics					X	
		Feasibility Studies			X			
		PEST Analysis			X			
		SWOT Analysis			X			
CONTROL	Statistical Process Control (SPC)	Objective and Benefits of SPC					X	
		Rational Subgrouping			X			
		Selection of Variables		X				
		Selection of Control Charts				X		
		Analysis of Control Charts				X		
	Other Control Tools	Total Productive Maintenance (TPM)			X			
		Visual Factory				X		
	Maintaining Control	Measurement System Re-Analysis					X	
		Control Plan			X			
	Sustaining Improvements	Lessons Learned					X	
		Training Plan Deployment			X			
		Documentation			X			
Ongoing Evaluation				X				
Design for Six Sigma (DFSS)	Design for Six Sigma (DFSS)	DMADV (define, measure, analyze, design and validate)				X		
		DMADOV (define, measure, analyze, design, optimize and validate)		X				
	Design for x (DFx)	Design Constraints		X				
		Design for Cost		X				
		Design for Maintainability		X				
		Design for Manufacturability		X				
	Robust Design and Process	Design for Test		X				
		Robust Product Design			X			
		Statistical Tolerancing			X			
	Special Design Tools	Tolerance Design			X			
		Porter's Five Forces Analysis		X				
		Portfolio Architecting		X				
		Theory Inventive Problem-Solving (TRIZ)			X			
		Systematic Design			X			
Critical Parameter Management				X				
Pugh Analysis			X					