

Lean Certification Body of Knowledge

(Version 3.0, December 2008)



LEAN CERTIFICATION

BODY OF KNOWLEDGE RUBRIC VERSION 3.0

	WEIGHTINGS PER EXAM		
	Lean Bronze (tactical)	Lean Silver (integrative)	Lean Gold (strategic)
MODULE 1			
1. Cultural Enablers	15%	20%	25%
1.1. Principles of Cultural Enablers	3%	4%	5%
1.1.1. Respect for the individual			
1.1.2. Humility			
1.2. Processes for Cultural Enablers	4%	8%	12%
1.2.1. Planning & Deployment			
1.2.2. Create a sense of urgency			
1.2.3. Modeling the lean principles, values, philosophies			
1.2.4. Message Deployment - Establishing vision and direction			
1.2.5. Integrating Learning and Coaching			
1.2.6. People development - Education, training & coaching			
1.2.7. Motivation, Empowerment & Involvement			
1.2.8. Environmental Systems			
1.2.9. Safety Systems			
1.3. Cultural Enabler Techniques and Practices	8%	8%	8%
1.3.1. Cross Training			
1.3.2. Skills Assessment			
1.3.3. Instructional Goals			
1.3.4. On-the-Job Training			
1.3.5. Coaching & Mentoring			
1.3.6. Leadership Development			
1.3.7. Teamwork			
1.3.8. Information Sharing (Yokoten)			
1.3.9. Suggestion Systems			
MODULE 2			
2. Continuous Process Improvement	60%	30%	15%
2.1. Principles of Continuous Process Improvement	15%	10%	6%
2.1.1. Process Focus			
2.1.2. Identification & Elimination of Barriers to flow			
2.1.2.1. Flow & the Economies of Flow			
2.1.2.2. 7 Wastes (Muda), Fluctuation (Mura), and Overburden (Muri)			
2.1.2.3. Connect & Align Value added work fragments			
2.1.2.4. Organize around flow			
2.1.2.5. Make end-to-end flow visible			
2.1.2.6. Manage the flow visually			
2.1.3. Match rate of production to level of customer demand - Just-in-Time			
2.1.4. Scientific thinking			
2.1.4.1. Stability			
2.1.4.2. Standardization			
2.1.4.3. Recognize Abnormality			
2.1.4.4. Go and See			
2.1.5. Jidoka			
2.1.5.1. Quality at the source			
2.1.5.2. No defects passed forward			

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	Lean Bronze (tactical)	Lean Silver (integrative)	Lean Gold (strategic)
2.1.5.3. Separate man from machine			
2.1.5.4. Multi-process handling			
2.1.5.5. Self detection of errors to prevent defects			
2.1.5.6. Stop and Fix			
2.1.6. Integrate Improvement with Work			
2.1.7. Seek Perfection			
2.1.7.1. Incremental continuous improvement (Kaizen)			
2.1.7.2. Breakthrough continuous improvement (Kaikaku)			
2.2. Continuous Process Improvement Systems	20%	10%	7%
2.2.1. Visual Workplace			
2.2.1.1. 5S standards and discipline			
2.2.2. Lot size reduction			
2.2.3. Load leveling			
2.2.4. 3P Production Process Preparation			
2.2.5. Total Productive Maintenance (including predictive)			
2.2.6. Standard Work			
2.2.7. Built-in feedback			
2.2.8. Strategic Business Assessment			
2.2.9. Continuous Improvement Process Methodology			
2.2.9.1. PDCA			
2.2.9.2. DMAIC			
2.2.9.3 Problems Solving Storyboards			
2.2.10 Quality Systems			
2.2.10.1 ISO and Other standards			
2.2.11 Corrective Action System			
2.2.11.1. Root Cause analysis			
2.2.12. Project Management			
2.2.13 Process design			
2.2.14 Pull System			
2.2.15 Knowledge Transfer			
2.3. Continuous Process Improvement Techniques & Practices	25%	10%	2%
2.3.1. Work Flow Analysis			
2.3.1.1. Flowcharting			
2.3.1.2. Flow Analysis Charts			
2.3.1.3. Value Stream Mapping			
2.3.1.4. Takt Time Analysis			
2.3.2. Data Collection and Presentation			
2.3.2.1. Histograms			
2.3.2.2. Pareto Charts			
2.3.2.3. Check Sheets			
2.3.3. Identify Root Cause			
2.3.3.1. Cause & Effect diagrams (Fishbone)			
2.3.3.2. 5-Whys			
2.3.3.3. Failure Mode and Effects Analysis			
2.3.4. Presenting Variation Data			
2.3.4.1. Statistical Process Control Charts			
2.3.4.2. Scatter and Concentration Diagrams			
2.3.5. Product and Service Design (make sure to include engineering changes re: capabilities)			
2.3.5.1. Concurrent Engineering			

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2.3.5.2. Quality Function Deployment			
2.3.5.3. Product or Process Benchmarking			
2.3.5.4. Design for Product Life Cycle (DFx) - cradle to cradle			
2.3.5.5. Variety Reduction - product and component			
2.3.5.6. Design for Manufacturability			
2.3.6. Organizing for Improvement			
2.3.6.1. Kaizen Blitz Events			
2.3.7. Countermeasure Activities			
2.3.7.1. Mistake and Error Proofing (Poka Yoke)			
2.3.7.2. Quick Changeover/Setup Reduction (SMED)			
2.3.7.3. One Piece Flow			
2.3.7.4. Right sized equipment			
2.3.7.5. Cellular Flow			
2.3.7.6. Sensible Automation			
2.3.7.7. Material Signals (Kanban)			
2.3.7.8. Source Inspection			
2.3.8. Supply Processes External			
2.3.8.1. Supplier managed inventory			
2.3.8.2. Cross-docking			
2.3.8.3. Supplier Assessment and Feedback			
2.3.8.4. Supplier Development			
2.3.8.5. Supplier Benchmarking			
2.3.8.6. Logistics			
2.3.9. Supply Processes Internal			
2.3.9.1. Material Handling			
2.3.9.2. Warehousing			
2.3.9.3. Planning and Scheduling			
MODULE 3			
3. Consistent Lean Enterprise Culture	10%	20%	30%
3.1. Principles of Consistent Lean Enterprise Culture	5%	7%	11%
3.1.1. Systemic Thinking			
3.1.1.1. Part-whole relationships are clear and explicit through holistic thinking			
3.1.1.2. The organization evolves as necessary to accommodate future conditions through dynamic thinking			
3.1.1.3. Closed-loop thinking to assure effective feedback of organizational learning			
3.1.2. Constancy of Purpose			
3.1.2.1. Focus on Results			
3.1.2.2. Focus on Waste Elimination			
3.1.2.3 Focus on Value to customer			
3.1.3. Social Responsibility			
3.2. Processes for Developing Consistent Lean Enterprise Culture	3%	6%	11%
3.2.1. Enterprise Thinking			
3.2.1.1. Organize around flow			
3.2.1.2. Integrated business system and improvement system			
3.2.1.3. Reconcile reporting systems			
3.2.1.4. Information management			
3.2.2. Policy Deployment / Strategy Deployment			

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3.2.2.1. Scientific thinking as a strategy process			
3.2.2.2. Series of nested experiments			
3.2.2.3. Dynamic give and take			
3.2.2.4. Forming consensus			
3.2.2.5. Align strategies and execution			
3.2.2.6. Standard work for strategy communication - how we think and talk			
3.2.2.7. Resource deployment and allocation			
3.3. Consistent Enterprise Culture Techniques & Practices	2%	7%	8%
3.3.1. A3			
3.3.2. Catchball			
3.3.3. Redeployment of Resources			
MODULE 4			
4. Business Results	15%	30%	30%
4.1. Principles of Business Results	4%	10%	12%
4.1.1. Create Value first to drive performance			
4.1.1.1. Measure what matters to the customer			
4.1.1.2. Measure normal versus abnormal conditions - (triggers response)			
4.1.1.3. Guidelines for Measurement Categories			
* Customer demand and characteristics			
* Customer retention			
* Waste			
* People Development Measures			
* Quality			
* Cost and Productivity			
* Competitive Impact			
4.2. Measurement Systems	3%	10%	12%
4.2.1. Measurement			
4.2.1.1 Understand interdependencies between measures and measurement categories			
4.2.1.2 Align internal measures with what matters to customers			
4.2.1.3 Measure the results from the 'whole' system			
4.2.1.4 Measure flow and waste			
4.2.1.5 Lean Accounting			
4.2.1.6. Voice of the Customer			
4.2.2. Goal and Objective Setting			
4.2.2.1. SMART (Specific, Measurable, Achievable, Realistic, Timely)			
4.2.2.2. Tied to the customer			
4.2.3. Analysis - Understand what moves the dial on measures			
4.2.4. Reporting			
4.2.4.1. Visible feedback real-time			
4.3. Key Lean Related Measures	8%	10%	6%
4.3.1. Quality			
4.3.1.1. Rework			
4.3.1.2. First Pass Yield			
4.3.2. Delivery			
4.3.2.1 Takt Time			
4.3.2.2 Cycle Time			

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4.3.2.3 Lead Time			
4.3.3 Cost			
4.3.3.1 Inventory turns			
4.3.3.2 Queue time			
4.3.3.3 Wait time (delays)			
4.3.3.4 Overall Equipment Effectiveness (OEE)			
4.3.3.5 Changeover Time			
4.3.4 Financial Impact			
4.3.4.1. Cash Flow			
4.3.5 Competitive Impact			
4.3.5.1. Customer Satisfaction			