



Lean IT Kaizen

Syllabus

2017-03



1 Introduction

- 3-day course
- Foundation is a prerequisite
- The course learning objectives are focused on building on the learning objectives from the Lean IT Foundations to provide specific skills based training to IT professionals responsible for facilitating Kaizen improvement events.
- The course uses the Six Sigma DMAIC improvement model leveraging the Lean A3 tool as the basis for progressively completing a full improvement proposal.
- Practical skills and application of learning outcomes will be demonstrated by each student developing through the completion of an A3. Participants can choose to either use a common case study or use one from their own experience.
- The Lean IT Kaizen is someone who is involved with a Lean improvement project that could be at any level of the IT organization, in any 'department'.

LITA Lean IT Kaizen Exam Details	
Number of questions	40
Type of questions	Multiple Choice (75%), Scenario based Multiple Choice (25%)
Pass mark	65% (26 of 40)
Pass mark Accredited Trainer	75% (30 of 40)
Exam duration in minutes	90
Open book	No

LITA Lean IT Kaizen Lean Exam Question Weighting		
IN	Introduction	10%
OK	Organizing Kaizen	10%
A3	A3 Method	15%
DE	Define	10%
ME	Measure	20%
AN	Analyze	10%
IM	Improve	10%
CO	Control	15%

2 Syllabus

Note: Primary References can be found in chapter 3 of this document.

In the following tables, the key aspects of the Lean IT Kaizen Syllabus are described.

Syllabus Area Code IN		Syllabus Area : Introduction (IN)	Primary References
Level	Topic	Goal: Introduce kaizen concepts	
		Know the most important concepts regarding kaizen	
		Specifically to:	
01	01	Recall and understand definitions of Kaizen (continuous improvement), Kakushin (innovation) and Kaikaku (revolutionary change/'transformation of mind') as the three forms of change for the better within Lean	1.1
01	02	Recall the phases in the DMAIC method	1.4
01	03	Understand DMEDI: (Define, Measure, Explore, Develop, Implement) the innovation cycle as compared to DMAIC	1.4
01	04	Recall Continuous Improvement models, specifically ITIL Continual Service Improvement and Plan-Do-Check-Act,	1.3
01	05	Difference between daily kaizen and improvement kaizen	1.2, 2.1, 2.2
01	06	Kaizen mindset in relation to daily kaizen and improvement kaizen	1.2
		Understand the following aspects dealt with in the Introduction	
		Specifically to:	
02	01	Describe the Kaizen Mindset	1.2
02	02	Identify the core elements of the Kaizen Mindset	1.2
02	03	Identify the difference between Improvement Kaizen and Daily Kaizen; identify benefits and drawbacks of each	1.2

02	04	Understand the difference between a problem and the IT Service Management definition of a problem	1.6 and sub-paragraphs
02	05	Identify Muri, Mura and Muda as elements that can be removed using Kaizen	
Apply the following aspects dealt with in the Introduction			
Specifically able to:			
03	01	Differentiate between situations where DMAIC is used as opposed to DMEDI	1.4
03	02	Identify how Lean looks at problems	1.2, 1.5

Syllabus Area Code OK		Syllabus Area : Organizing Kaizen (OK)	Primary References
Level	Topic	Goal: Governance and Organization of Kaizen events	
Know the key components of Organizing Kaizen			
Specifically to:			
01	01	Recall the sources of improvement initiatives – Voice of the Customer, Voice of the Process, Voice of the Business, Voice of the regulator	2.2.1
01	02	Kaizen team roles: kaizen sponsor, kaizen lead, kaizen team member	2.2.2
Understand the following aspects related to Organizing Kaizen			
Specifically to:			
02	01	Identify the correct team members for a kaizen team	2.2.2
02	02	Identify the way to select kaizen initiatives	2.2.3
02	03	Identify the activities for which each of the kaizen roles is responsible	2.2.2
Apply the following aspects related to Organizing Kaizen			
Specifically able to:			
03	01	Gain support for the kaizen event	2.2.2, 4.5
03	02	Plan and prepare a kaizen event	2.2.3
03	03	Select the correct team members for a kaizen team	2.2.2
03	04	Select kaizen initiatives	2.2.3

Syllabus Area Code A3		Syllabus Area : A3 Method (A3)	Primary References
Level	Topic	Goal: Learn conciseness	
Know the key components of the A3 Method			
Specifically to:			
01	01	Recall the origins and goals of the A3 Method and specific use of A3 Problem-solving report	3.1
01	02	Recall the role of the key sections on an A3 Problem Solving Report: Background, Current Condition, Future State goals/setting targets, Analysis, Proposed options, Plan / Improvement and Follow-Up	3.2
01	03	Identify the aim of A3 Problem-solving report, A3 Status report and A3 Proposal report	3.2, 3.3
01	04	Understand the MECE concept "mutually exclusive and collectively exhaustive"	3.5
Understand the following aspects related to the A3 Method			
Specifically to identify:			
02	01	Explain the difference between Summarizing, Analyzing and Synthesizing	3.4
02	02	Identify whether information is "mutually exclusive and collectively exhaustive" (MECE)	3.5
02	03	Identify the situation, complication and key question of a situation	3.5
02	04	Difference between A3 Problem-solving report, A3 Status report and A3 Proposal report	3.2, 3.3
Apply the following aspects related to the A3 Method			
Specifically able to:			
03	01	Summarize information into the A3 format	3.2
03	02	Structure communication according to the Pyramid principle	3.5

Syllabus Area Code DE		Syllabus Area : Define (DE)	Primary References
Level	Topic	Goal: what types of problems/ how to write a problem statement/ creating problem definition	
Know the key aspects of the Define phase			
Specifically to recall:			
01	01	Recall the Key Steps of the Define Stage <ol style="list-style-type: none"> 1. Select Problem and identify owner 2. Create Problem statement and select kaizen team 3. Validate the scope of the problem 4. Collect VoC information 5. Create high level kaizen plan 	4.8
01	02	Recall the definition of a Hypothesis and a Problem Statement	4.1
01	03	Understand the basic types of problems: simple, complicated, complex, chaotic, disorder, based on Cynefin model	4.3
01	04	Recall the perspectives required to validate a problem statement	4.2
Understand the following aspects of the Define phase			
Specifically to:			
02	01	Identify the types of problems: simple, complicated, complex, chaotic disorder, according to the Cynefin model	4.3
02	02	Validate a problem based on business benefits, impact and feasibility	4.4
02	03	Which tools to use to define and scope a problem statement (SIPOC, CTQ)	4.8
02	04	Explain the difference between a Hypothesis and a Problem Statement	4.1

Applying the following aspects of the Define phase			
Specifically to able:			
03	01	How to write a problem definition	4.1
03	02	Complete an A3 "Background Section"	4.7
03	03	Map the key stakeholder for the Kaizen activity; carry out a stakeholder analysis	4.5, 4.6
03	04	Identify typical problems in an IT context	4.4

Syllabus Area Code ME		Syllabus Area : Measure (ME)	Primary References
Level	Topic	Goal: refine the problem statement based on measurement	
Know the key aspects of the Measure phase			
Specifically to:			
01	01	Recall Key Steps in Measure <ol style="list-style-type: none"> 1. Identify the outputs and inputs of the process in which the problem occurs 2. Create Validate Value Stream Map of the process 3. Create and execute data collection plan 4. Validate the measurement system 5. Assess the capability and performance of the process 6. Identify Quick Wins improvements 	5.6
01	02	Recall IT units of work: incident, Service Request, Problem, Standard Change, Operational activity, Non-standard Change, Advice, Plan	5.1.2
01	03	Recall three types of variable: dependent, independent and control	5.1.1
01	04	Explain the definitions of Baseline and Benchmark	5.3
01	05	Explain the three generic types of units of work: runners, repeaters and strangers	5.1.2
01	06	Recall VSM metrics (Lead time, Takt rate, Changeover time, Queue time, Work-in-process, Capacity, Throughput, VA / NNVA / NVA time) and calculations (PCE, Little's Law)	5.4
Understand the following aspects of the Measure phase			
Specifically to identify:			
02	01	Identify the difference between Qualitative and Quantitative Measurement systems	5.2

02	02	Identify the difference between a Baseline and a Benchmark	5.3
02	03	Identify the relationship between IT units of work and the three generic types of units of work	5.1.2
02	04	Identify types of Qualitative and Quantitative Measurement systems	5.2
02	05		
Applying the following aspects of the Measure phase			
Specifically able to:			
03	01	Create a Value Stream map with metrics and calculations (Exercise)	5.4
03	02	Complete Current Conditions section of A3	5.5
03	03	Set up measurement systems	5.2

Syllabus Area Code AN		Syllabus Area : Analyze (AN)	Primary References
Level	Topic	Goal: get to the root cause of the problem	
Know the key aspects of the Analyze phase			
Specifically to recall:			
01	01	Recall Key Steps for Analyze Phase <ol style="list-style-type: none"> 1. Determine the critical independent variables 2. Perform the data analysis 3. Perform the process analysis 4. Determine the root causes 5. Prioritize the root causes 	6.6
01	02	Seven basic tools of Quality: histogram, pareto chart, scatter diagram, flow chart, control chart, fishbone (Ishikawa) diagram, check sheet	6.1 and sub-paragraphs
01	03	Recall common cause variation and special cause variation	6.1.5
01	04	Recall Time Trap and Capacity Constraint	6.3
01	05	Recall the tools for investigating root cause: 5 whys, Cause & Effect matrix, Failure Mode Effects Analysis	6.2 and sub-paragraphs
Understand the following aspects of the Analyze phase			
Specifically to identify:			
02	01	Identify each of the seven basic tools of Quality	
02	02	Visualize and analyze root cause <ol style="list-style-type: none"> 1. 5 whys 2. Cause & Effects matrix 3. Failure Mode Effects Analysis (FMEA) 	6.2 and sub-paragraphs

02	03	Identify the difference between Time Trap and Capacity Constraint	6.3
02	04	Identify the difference between common cause variation and special cause variation	6.1.5
Applying the following aspects of the Analyze phase			
Specifically able to:			
03	01	Identify ways for dealing with common cause variation and special cause variation	6.1.5
03	02	Use all tools described in this section	6.1 and 6.2 and sub-paragraphs
03	03	Complete the Analyze section of A3	6.5
03	04	Analyze a Value Stream Map	6.3
03	05	Identify whether a process is in control or out of control	6.1.5

Syllabus Area Code IM		Syllabus Area : Improve (IM)	Primary References
Level	Topic	Goal: identify improvement options	
Know the key aspects of the Improve phase			
Specifically to recall:			
01	01	Recall Key Steps for Improve Phase <ol style="list-style-type: none"> 1. Generate potential solutions 2. Select and prioritize solutions 3. Apply best and good practices 4. Develop "Future State" VSM 5. Pilot the solution and confirm improvement outcomes 6. Create implementation plan for full-scale roll-out of solution(s) 	7.7
01	02	Recall idea generation techniques: brainstorming, reverse thinking, SCAMPER	7.1 and sub-paragraphs
01	03	Recall solution prioritization techniques: affinity mapping, solution matrix, multi-voting, business case development	7.2 and sub-paragraphs
Understand the following aspects of the Improve phase			
Specifically to identify:			
02	01	How to test a solution depending on the type of problem (Cynefin) to which it is related	7.3
02	02	Identify idea generation techniques, specifically : brainstorming, reverse thinking, SCAMPER	7.1 and sub-paragraphs
02	03	Identify solution selection and prioritization techniques, specifically affinity mapping, solution matrix, multi-voting, business case development	7.2 and sub-paragraphs
02	04	Best practice solutions within IT: ITIL, Cobit, Scrum, Prince2/ PMI	7.4

02	05	Good practice (principle-based) solutions within IT: Lean IT, Agile, DevOps	7.4
Applying the following aspects of the Improve phase			
Specifically able to:			
03	01	Apply idea generation and solution selection techniques	7.1, 7.2 and sub-paragraphs
03	02	Complete A3 Section Future State/ Targets & Proposed Options	7.6

Syllabus Area Code CO		Syllabus Area : Control (CO)	Primary References
Level	Topic	Goal: ensuring the sustainability of the improvement	
Know the key aspects of Control phase			
Specifically to recall:			
01	01	Recall the definition of a control	8.1
01	02	Recall Measurement of improvement <ol style="list-style-type: none"> 1. Critical Success Factor / Key Performance Indicator 2. Consistent and Coherent measurements 3. Lead and Lag Measures 4. Creation of Management Dashboards 	8.3
01	03	Recall the components of a Control plan: documentation, monitoring, response, training	8.2 and sub paragraphs
01	04	Recall types of documentation: policy, process, standard operating procedure	8.2.1
01	05	Recall types of monitoring: metrics, visual management, performance dialogue, cascade	8.3
01	06	Recall Key steps in the Control Phase <ol style="list-style-type: none"> 1. Create measurement system 2. Create documentation 3. Create Control plan 4. Communicate to stakeholders 5. Present the results as described on the A3 6. Transition ownership 	8.6
Understand the following aspects of Control phase			
Specifically to identify:			

02	01	Identify a Standard Operating Procedure	8.2.1
02	02	Level of documentation, based on risk / value	8.2.1
02	03	Capture the lessons learned (of failure and success)	8.5
02	04	Replicating improvements to other areas	8.4
02	05	Identify the components of a communication plan	8.3
Applying the following aspects of the Control phase			
Specifically able to:			
03	01	Create a measurement system to control the improvement, present in a dashboard	8.3
03	02	Complete follow-up section on A3 and finalize all items on the A3	8.5
03	03	Create a communication plan tailored to the stakeholders	8.3

3 Lean IT Kaizen Guide References

Below are the references that support the Lean IT Kaizen Training.

3.1 Reference A

Lean IT Kaizen Publication and Glossary

Optional reading for participants or trainers who would like to build more understanding, the following references are recommended:

3.2 Reference B

Lean Six Sigma Pocket Toolbook (chapters 1-4, 9)

Authors: Michael L. George et al

ISBN number 0-07-144119-0

Publisher: McGraw Hill, 2005

3.3 Reference C

Understanding A3 Thinking

Author: Durward K Sobek III, Art Smalley

ISBN: 978-1-56327-360-5

Publisher: CRC Press, 2008

3.4 Reference D

A Leader's Framework for Decision Making

Author: David Snowden, Mary Boone

Publisher: Harvard Business Review

Date: November 2007, p69-76

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