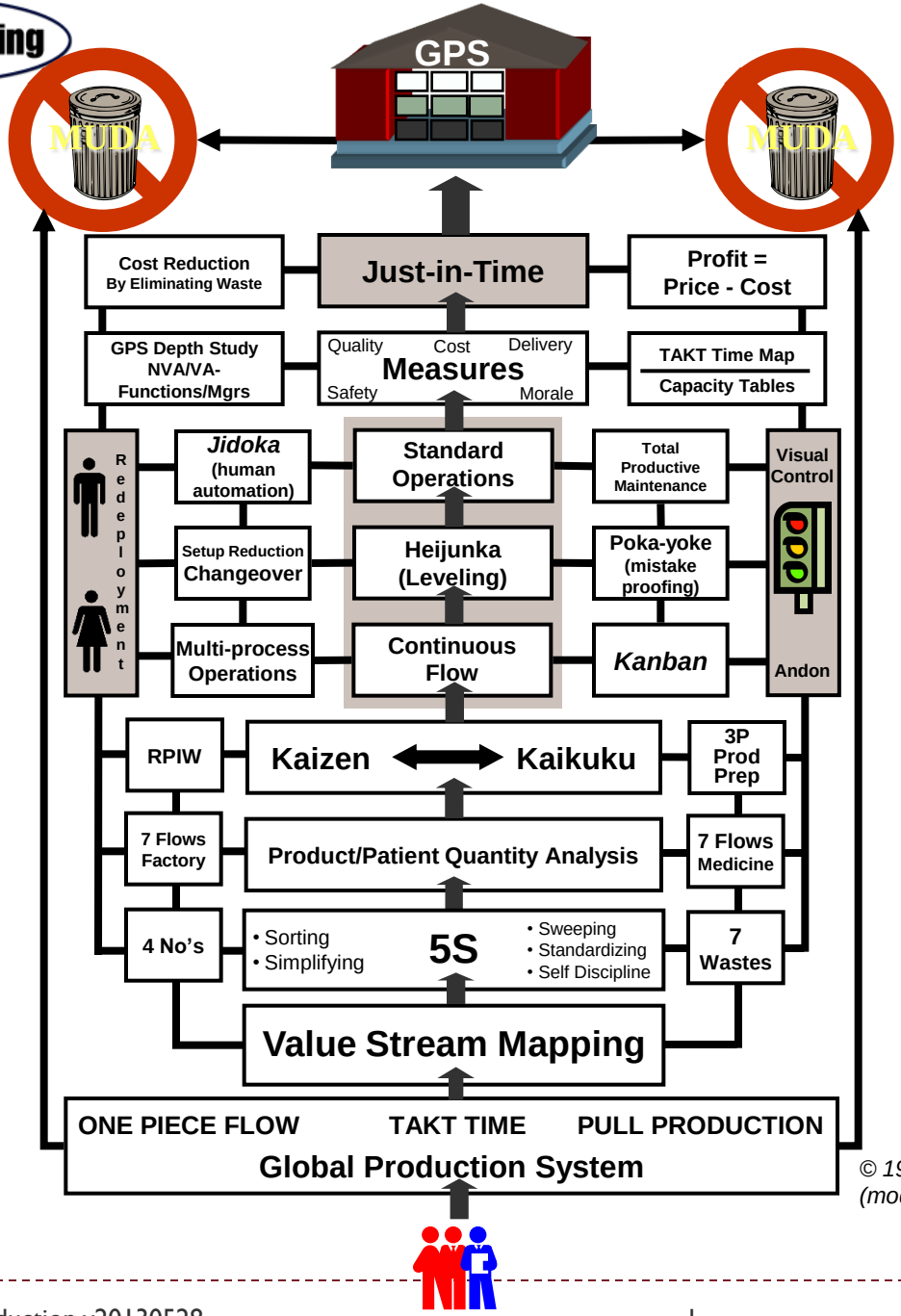

Introduction Module 1

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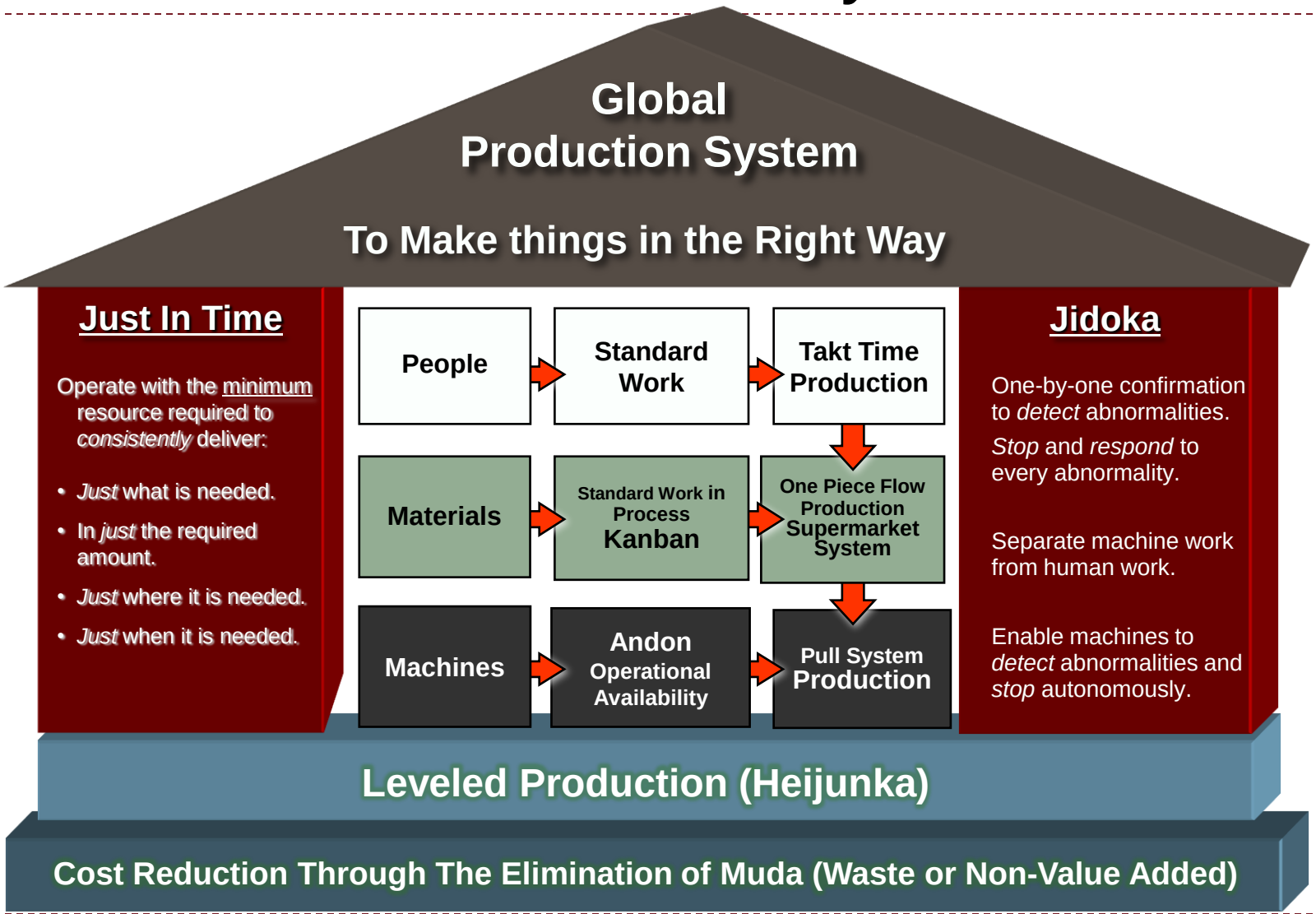
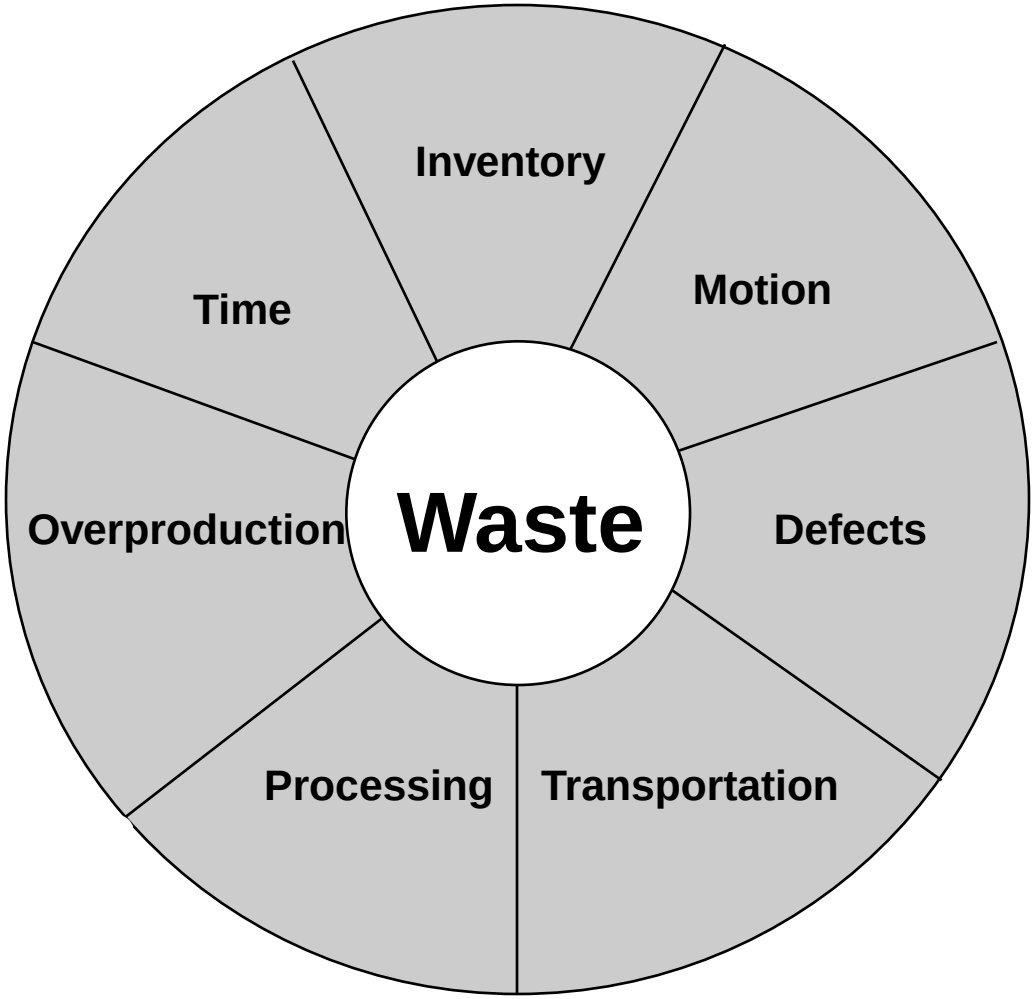
Lean Production System



Taiichi Ohno's Seven Wastes



Taiichi Ohno's Seven Wastes

Waste	Concepts	Health Care Examples
Waste of Overproduction: Producing what is unnecessary, when it is unnecessary and in an unnecessary amount."	• Producing products which are not required by customers or patients. • Producing products during a time of the year when they will not be used. • Producing more items than there is demand for by customers or patients. • Completing items before they can be processed at the next step in the process flow.	• Making photocopies of a form which is never used. • Providing copies of reports to people who have not asked for them and will not actually read them. • Processing piles of documents that then sit at the next work station. • CC's on emails. • Repeating lab tests or imaging.
Waste of Time on Hand (Waiting): "Waste - the causes originate in waiting for materials, operations, conveyance, inspection, as well as idle time attendant to monitoring and operation procedures."	• Waiting for the prior step in the process to complete their task before being able to start one's own work. • Delays caused by materials or equipment not being available when they are needed to be used. • Delays caused by the unavailability of Maintenance personnel to fix a machine. • Waiting for Quality Assurance checks.	• Patients waiting to see their physician. • Staff waiting on the phone to schedule appointments. • Early morning admits for surgeries that won't be performed until later in the day. • Waiting for support services such as portering. • Waiting for equipment to be repaired before being able to do work. • Waiting for a meeting which is starting late.

Taiichi Ohno's Seven Wastes, cont.

Waste	Concepts	Health Care Examples
Waste of Stock on Hand (Inventory): "Inventory waste is when anything – materials, supplies, equipment– is retained for any length of time. This includes not only warehouse stock, but also items in the clinic or hospital unit setting that are retained at or between processes."	• Items sitting in storage facilities. • Finished products for which there are no orders. • Excessive safety stocks. • Queues of items to be processed before machines or process step.	• Office supplies in Admin hallway. • Expensive clinical supplies/implants that can be ordered on a JIT basis. • Dictations waiting for transcription. • Surgical instruments waiting to be autoclaved. • Charts waiting to be processed.
Waste of Movement: "Unnecessary movement, movement that does not add value, movement that is too slow or too fast."	• Excessive walking between work stations or steps. • Moving to catch up with a process. • Searching for supplies or equipment.	• Physicians and staff looking for items which should be clearly labeled and at point of use. • Physicians walking to their office during an exam to look at a chart note. • Going from one facility to another for meetings. • Staff bending or reaching excessively to get items used every day.

Taiichi Ohno's Seven Wastes, cont.

Waste	Concepts	Health Care Examples
Waste of Making Defective Products: "Waste related to costs for inspection of defects in materials and processes, customer complaints, rework, and repairs."	• Rework. • Replacing defective products found before shipment or returned by customers. • Using defective raw material or parts. • Making large lots of defective parts instead of catching a problem after one or two bad parts. • Costs of processing complaints. • Costs of doing rework.	• Avoidable medical errors. • Infections given to patients during care. • Prescription or order errors, fixing errors made in charts such as missing information. • Dealing with patient complaints about service. • Mistakes caused by incorrect information or miscommunication; handwritten orders, verbal orders.
Waste in Transportation: "Created by conveying, transferring, picking up/setting down, piling up, and otherwise moving unnecessary items. Also created by problems concerning conveyance distances, conveyance flow, and conveyance utilization rate."	• Moving a item from one building to another before it can be further processed. • Collecting items from various bins for assembly (as opposed to having them all in one place in a kit). • Long travel distances caused by process-oriented layouts.	• Moving charts from one location to another. • Moving supplies into and out of a storage area. • Moving equipment for surgeries in/out of ORs. • Moving equipment for procedures in/out of procedure rooms. • Moving inpatients from one bed to another. • Transporting patients instead of bringing the services to them.

Taiichi Ohno's Seven Wastes, cont.

Waste	Factory Examples	Health Care Examples
Waste of Processing Itself: "Unnecessary processes and operations traditionally accepted as necessary."	• Performing incoming inspection when suppliers' processes already guarantee defect-free products. • Continuing to train employees in tasks/skills which are no longer needed. • Performing steps that have become unnecessary because of design or process changes. • Processing steps that are not technically justified.	• Repeating lab or imaging tests when current test results are available. • More extensive lab or imaging tests than required for care. • Hard copies of memos sent by email. • Different people asking the same questions when patient is admitted. • Multiple recording and logging of the same data. • Shadow charts.

What is VA/NVA?

Identify Value Added vs. Non-Value Added Activity

Ask: "Is this something that the customer would be willing to pay for?

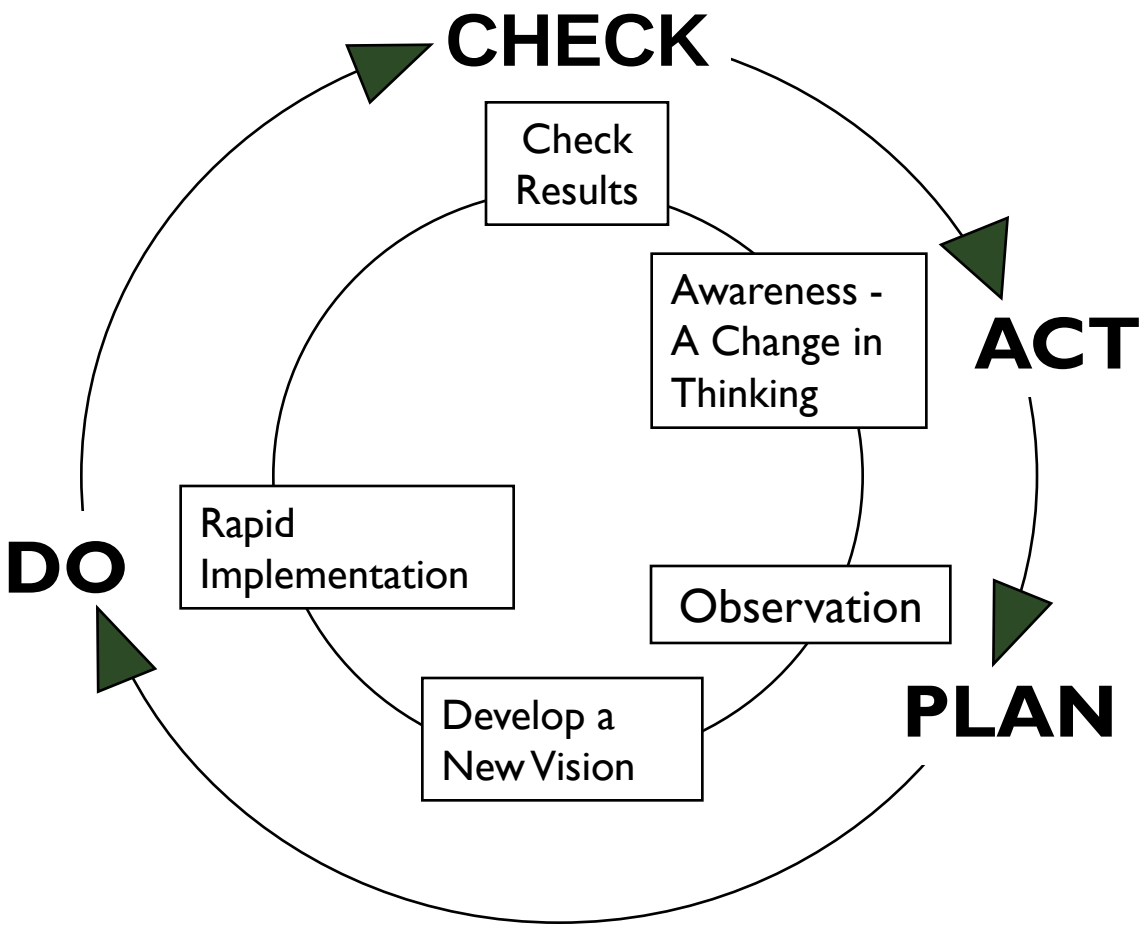
Better yet, ask: "Does this activity change the **form, fit**, or **function** of the product or service?

Definition:

Rapid Process Improvement Workshop

A team of people who do the work, fully engaged in a rigorous and disciplined five day process, using the tools of lean to achieve immediate results in the elimination of waste.

This Workshop is Based on Fast Cycles of Education and Application (Learn/Do)



Introductions

- Your name.
- Your responsibilities.
- One personal item of interest or…
- Some thing or event you are proud of.

Exercise for Teams to Identify their Expectations/Issues/Concerns

Key Principles

1. Throw out your old attitudes about work.
2. Don't think of reasons why it won't work, think of ways to make the new ideas work.
3. Don't make excuses and don't accept excuses. Don't say, "we can't."
4. Don't wait for perfection. 50% is fine when beginning improvements.
5. Correct problems immediately.
6. Wisdom arises from difficulties.
7. Ask "why" at least five times until you find the root cause.
8. Better the "wisdom" of ten people than the "knowledge" of one.
9. Improvements are unlimited. Don't substitute money for brains.
10. Improvement is made at the workplace, not from the office.

Expectations of Participants

- Develop a common understanding of Just In Time principles.
- Experience the RPIW implementation process.
- Understand this improvement approach.
- Know the expectations and limitations of this approach.
- Understand the level of commitment required by all management.
- Have fun!!!

Lean Leader Certification

1. **Required reading:** List of 3-7 books depending on role in the Lean Transformation (Lean Leader or KPO/KOT Specialist)
2. **Kaizen Basics:** Attend one day class as a participant .
3. **Value Stream Mapping (VSM):** 4 days. Completed prior to Lean Leader Training.
4. **Lean Leader Training (LLT):** 3 days. Completed prior to MDD and MM.
   - Global Production System Overview
   - All modules taught during three days including exercises
   - Quizzes for books completed and handed in to be graded
5. **Module Deep Dive (MDD):** 1 day. JBA Consultants conduct 2 days of intense, in-depth review of selected modules prior to Module Marathon. Participants attend 1 of the 2 days.
6. **Module Marathon (MM):** 1 day. Group divided between 2 days for testing.
   - Sessions are require oral presentations by each participant of three (3) modules. Half the group will present on the first day, half on the second day. Module quiz handed in as entry ticket.

Lean Leader Certification

7. **Participate in Rapid Process Improvement Workshops RPIWs**
   - Must be a Team Lead, Sub-Team Lead, and Participant.
   - Participant: 100% time for Event Week.
   - Team Lead & Sub-Team Lead: Week -3: 100 % time; Week -2: 50% time; Week -1: 25% time; RPIW Week: 100% time; Week +1: Team meeting, 1 day.

8. **North American Tour (7 days including travel):**
   - JBA-Autoliv tour of Toyota Supplier Site in Ogden, Utah. 1 day.
   - JBA-Virginia Mason Institute Overview & Mistake Proofing Seminar, Seattle, WA. 3 days.
   - JBA Seattle Children's Hospital tour, Seattle, WA. 1 day.

9. **Mistake Proofing Project:** Variable time commitment with team over 4 months or until zero defect rate is achieved.

10. **Kanban Seminar:** For CEO, CEO direct reports, KPO/KOT, and Materials Management staff. 2 day prep and 1 week seminar workshop.

Once certified to maintain certification:

Annually participate in one RPIW (5) day event per year as Team Leader (TL) or Sub-Team Leader (STL), and as team member; teach one Kaizen Basics class a year.

Lean Leader Certification

Distribute Books

Certification Overview and Orientation (5 days)

Value Stream Mapping (4 days)

Lean Leader Training (3 days)

Module Deep Dive (1 day)

Module Marathon (1 day)

North American Tour (5 days)

Kaizen Basics (1 day)

Participant (5 days) — RPIW **RPIW #1**

Sub-Team Lead — 2 weeks Prep RPIW **RPIW #2**

Team Lead — 2 weeks Prep RPIW **RPIW #3**

Lean Leader Time Commitment	
Pre-reading	3 days
VSM, LLT, MDD, MM	9 days
North American tour	7 days
Mistake Proofing Project	20 days
Kaizen Basics	1 day
RPIWs	33 days
Total:	**73 days**

Lean Leader Certification

Requirements for Passing Module Marathon

Leaders who do not pass Module Marathon will be scheduled to re-take it.

- If they fail the MM retake, they are required to go through the certification process again, starting with Value Stream Mapping.
- If they fail MM after repeating the certification process, they should be moved to a position not requiring leadership. We are implementing a transformation process where people in leadership positions are required to be certified leaders.

For RPIW Requirements: It is not the responsibility of the Kaizen Promotion Office/Kaizen Operation Team to provide Team Leaders, Sub-Team Leaders and sponsors from their ranks to fill RPIW slots in lieu of leaders from the certification tract that are for whatever reason not available. It is the responsibility of the KPO/KOT to "stop the line" and involve the CEO in making leaders available.

Additional Readings on Lean Manufacturing at Toyota:

Ohno, Taiichi, *Toyota Production System: Beyond Large-Scale Production*, Productivity Press, 1988.

Shingo, Shigeo, *Study of Toyota Production System from Industrial Engineering Standpoint*, Japan Management Association, 1981.

Black, John, *Lean Production*, Industrial Press Inc., 2008

Ju, David J., *Kanban: Just-In-Time At Toyota*, Productivity Press, 1989.

Womack and Jones, *Lean Thinking*, Simon and Schuster, 1996.