

Suggested training syllabus for using the LeanMan Lean Principles Training products.

Lean Concept Training Sequence	LeanMan Lean Presentation or Simulation Product	Learning Experience
OPT	Optimized Production Technology [USB provided with the OPT Factory Simulation Game Kit]	<p>Learn the secrets of production flow in this 14 step – 8-hour presentation of each of the variables encountered in the design and flow of product. Using dice to simulate yield and poker chips to simulate product, the participants experience the trials and tribulations of material movement in production.</p> <p>There are 14 steps to the game, in each we will change one or more production variables and test the results for analytical comparison. Variables such as capacity, bottleneck, overtime, batch transfer size, inventory levels and such will be tested and modified in an attempt to balance the line to produce Quality, Unit Cost, Inventory, Lead Time and Ship Performance metrics acceptable to the customer.</p> <p>Metrics are based on the production cost breakdown using depreciation, material cost, total cost, unit cost, lead time and a “M” factor calculation. Inventory will be the initial number used to “wet” the line. The “M” factor will be based on forecast and calculated as Material Cost divided by forecast, and this number will be used for game steps where the outcome does not meet forecast. These metrics will be calculated after each game step and aligned in a side by side comparison chart to track effects and progress as we attempt to create the ultimate efficient production line.</p> <p>To aid the facilitator before the class, a train-the-trainer Excel file is provided to simulate each of the game steps. The facilitator will toss the die and learn how to flow the materials and experience the pitfalls the participants will encounter such that the facilitator will have first-hand knowledge about the situation and be able to answer questions and support the play.</p> <p>This course was developed under the guidance of Eli Goldratt and is an excellent base foundation for understanding the need for Lean Mfg.</p>
Basic communication	LeanMan Teaming with Success Presentation and Hands-On Exercise [Teaming with Success USB and game package, or Developing Lean Eyes USB]	<p>Since lean is all about flow, and rapid communication is the basis of flow, we need to create a level playing field for team members to communicate with each other. That includes overcoming the language, cultural and personal barriers that exist in the team.</p> <p>For lean to be successful, we need to push good decision making as far down into the organization as possible. That means the process operators need to see, hear and understand the aural and visual cues that occur dynamically all day long, and to react correctly and rapidly and instinctively.</p> <p>During the presentation, there are two participant games played to reinforce the communication methods and demonstrate how the barriers to success influence accuracy in communication.</p> <p>A 32 question Teamwork Survey and score sheet is provided to help assess the team’s current stage of development.</p> <p>Following the presentation, the participants perform one of three survival scenario games. These fun adventures teach teamwork and consensus problem solving, both bedrock of lean. They also act as a setting for team members to get to know each other a little better in a fun non-work atmosphere.</p>

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Visual Communication	Visual Systems for Lean Presentation [Bonus files on the Deluxe Kit, Deluxe-Double, any Deluxe Plus Package and the Grand USBs]	<p>Sights and sounds we experience every day can become commonplace to us and take on a background position. We often see and react to situations without even being aware we are doing it.</p> <p>Visual communication takes a closer look at the way everyday information is presented to us and how we interpret and act automatically. Participants gain insight into the mechanism of visual information, and how to create visual instructions that anyone of any language can see and understand.</p>
Visual Understanding	LeanMan Developing Lean Eyes Presentation and Hands-On Exercises [Developing Lean Eyes USB]	<p>Once the verbal and visual communication channels are open, we need to start increasing the speed at which communication takes place. Visual communication is very rapid, and is essential to creating a lean enterprise. A person can instantly and correctly understand a need and an action by a simple look or glance, provided the information is presented adequately. Language becomes less a barrier and team member interaction becomes more intuitive.</p> <p>Sometimes we misinterpret what we see because of our own bias, so we need to understand the false meaning of certain visuals and to develop lean eyes to sort out the real information. This presentation uses the Gestalt theories to explore the tricks are brain plays and how we can improve communication accuracy.</p> <p>The USB contains three alternate presentations which focus on various training needs all related to the ability of the learner to observe and disseminate information.</p>
Seven Eight Types of Waste	<p>LeanMan Learning to See the Waste [Presentation and simulation is included on the Developing Lean Eyes USB, [Bonus files on the Deluxe Kit, Deluxe-Double, any Deluxe Plus Package and the Grand USBs; and simulation only provided with the Companion Kit]</p> <p>Participants receive a wallet size double-sided card with the eight non-value-adding wastes listed and described as defined by the Toyota Production System. 20 cards pre-printed are included with each Deluxe Kit, Deluxe-Double, any Deluxe Plus Package and the Grand, and files on the USB allow additional cards to be printed.</p>	<p>Almost everyone learns to perform large tasks in batch mode. As individuals, we learn to be efficient by performing and completing one step of a "process" at a time before advancing to the next step. As team members, we tend to bring this batch-mode bias to the application of all work, and that is a big problem for lean implementation.</p> <p>The Learning to See the Waste Presentation presents the concept of waste that the batch mode creates when teams of people are performing tasks. A tool for finding waste is included with this presentation. Called The 10-Second Test, this handy method teaches the team to observe and see where possible waste may be occurring within any process, and works equally well in office areas, service operations and production shops.</p> <p>The two-step Learning to See the Waste Car Factory Simulation follows the presentation, and is intended to focus on the batch-mode bias problem. The hands-on simulation starts with a batch-mode operation in the toy car factory. As the factory produces cars, the tools we learned in the presentation are applied and we begin to see where waste is occurring in the flow. The factory is then redesigned for lean flow. The participants can see first-hand the differences and begin to see how waste affects flow.</p> <p>Included with the simulation is the LTS Financial Chart which teaches participants to calculate earned value by the formula $EVA = Sales - COGS - Capital Charges$. This financial metric adds emphasis to the need to eliminate waste in the flow process.</p>

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Visual Control	Visual Control for Lean [Bonus file on the [Bonus files on the Deluxe Kit, Deluxe-Double, any Deluxe Plus Package and the Grand USBs]	Now that we are aware of types of visual and aural signals reaching out to us, we need to put them to good use in creating a lean, clean information channel to rapidly convey just the right information and in just the right way throughout the value stream.
Lean Principles	LeanMan The Five Principles of Lean [Bonus file on the [Bonus files on the Deluxe Kit, Deluxe-Double, any Deluxe Plus Package and the Grand USBs]	<p>Before going too much further in our lean journey, it is time to establish some lean thinking with the team. The presentation of the five principles of lean provides some discussion time with the team to help them begin to formulate the big picture.</p> <p>Lean is poorly implemented if confined to only a few point process areas in your enterprise stream.</p>
5=S	5-S for Lean Presentation [Bonus file on the [Bonus files on the Deluxe Kit, Deluxe-Double, any Deluxe Plus Package and the Grand USBs]	<p>As stated earlier, lean is all about flow and rapid communication. We learned in Teaming with Success that barriers do exist and they attempt to defeat the daily good communication and decision making we need to succeed with lean.</p> <p>Many of these barriers to success are self-imposed by the way we have designed our workspace, what we have chosen to store there, and how well we have provided for the visual communication channels necessary to transmit and receive information cues between team members.</p> <p>This introductory to 5-S presentation provides some fun ways to look at our work space and bring to our attention the clutter and debris that we step over every day and have become so accustomed to it that we don't even see it anymore.</p>
5=S Refresher presentation	5-S Defined [Support file on the 5-S Simulation Training Kit USB]	<p>This presentation presents the definitions contained in the LeanMan Jeopardy game opening slides sound. Intended as a prerequisite to the LeanMan Who Wants to Learn Lean-5-S game. This presentation provides all of the information necessary to play and win the 5-S game.</p> <p>This presentation, presented as a PowerPoint Slide Show, provides a fun refresher of 5-S knowledge when used as support for the 5th S – Sustain.</p>
5-S Jeopardy Game	LeanMan 5-S Jeopardy Game [Game file on the 5-S Simulation Training Kit USB]	<p>This presentation specifically focuses on the 5-S elements as identified by Taiichi Ono as part of the Toyota Production System. Each 5-S step is defined and described in practical terms. Following this is a Jeopardy-like game board with 5 categories and 5 levels of points for each category. Participants select their category and points, and the "answer" is shown. The participant then states the "question."</p> <p>There are many ways to play the game. The typical method is to put all contestants' names into a box and as each name is drawn, he or she selects and answers the question to win a prize. Use your imagination to create a fun experience as participants see and associate the 5-S terms with their meaning.</p> <p>The take-away is a full understanding of the 5 S terms and the differences between them. Once the team can recite the terms, they are ready for the next level of 5-S training.</p>

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Who Wants to Learn Lean – 5-S	LeanMan Who Wants to Learn Lean – 5-S [Game file on the 5-S Simulation Training Kit USB]	<p>This presentation takes the training provided in the 5-S Defined presentation and puts the team through the paces as they test their knowledge. The Who Wants to Be a Millionaire-like game with 15 questions challenges the skills while reinforcing the underlying elements of 5-S. Three versions of the game are included which present the questions in unique sequence so contestants can't memorize the pattern.</p> <p>This game makes a fun test of knowledge when used as support for the 5th S – Sustain.</p>
The 14 Philosophies of the Toyoda Family	LeanMan 14 Philosophies behind TPS [Bonus file on the [Bonus files on the Deluxe Kit, Deluxe-Double, any Deluxe Plus Package and the Grand USBs]	<p>With full understanding comes acceptance. This presentation provides some ideas on how lean evolved with the Toyoda family and subsequent members of the Toyota Motor Company as the roots of lean began to shape what eventually became to be called Lean Mfg.</p>
The ToyodaWay Jeopardy Game	LeanMan ToyodaWay Jeopardy Game [Game file on the ToyodaWay Game Set USB]	<p>This presentation specifically focuses on the 14 management principles that form the foundation of the Toyota Production System. Each principle is defined and described in practical terms. Following this is a Jeopardy-like game board with 5 categories and 5 levels of points for each category. Participants select their category and points, and the "answer" is shown. The participant then states the "question."</p> <p>There are many ways to play the game. The typical method is to put all contestants' names into a box and as each name is drawn, he or she selects and answers the question to win a prize. Use your imagination to create a fun experience as participants see and associate the TPS terms with their meaning.</p> <p>The take-away is a full understanding of the TPS terms and the differences between them. Once the team can recite the terms, they are ready for the next level of lean training.</p>
Who Wants to Learn Lean – The ToyodaWay	LeanMan Who Wants to Learn Lean – The ToyodaWay [Game file on the ToyodaWay Game Set USB]	<p>This presentation takes the training provided in the TPS Defined refresher presentation and the ToyodaWay Jeopardy game and puts the team through the paces as they test their knowledge. The Who Wants to Be a Millionaire-like game with 15 questions challenges the skills while reinforcing the underlying elements of TPS. Three versions of the game are included which present the questions in unique sequence so contestants can't memorize the pattern.</p> <p>This game makes a fun test of knowledge when used as support for the TPS Car Factory Simulation.</p>
TPS Car Simulation	TPS Car Simulation [Presentation and simulation included on the [Bonus files on the Deluxe Kit, Deluxe-Double, any Deluxe Plus Package and the Grand USBs]	<p>This implementation of the Toyota Production System training takes a slightly different focus to lean concepts than the Standard Car Factory simulation. In this exercise, attention is given to the support functions found in a factory, such as fixtures and totes, material kits, material conveyance, process and cross training, and workload balance.</p> <p>Lean flow is developed over five simulation steps, each applying attention to the process of trying continuous improvement, measuring results, and trying again. The simulation event is spaced over several tables and greater distances are used to simulate real factory communication conditions.</p> <p>Financial metrics for the simulation track progress as earned value steadily improves with each lean redesign.</p>

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VSM Loop Simulation	VSM Loop Simulation Facilitator Guide [Presentation and simulation included on the Deluxe Plus VSM Package USB] or [Presentation and simulation included on the VSM Upgrade USB]	<p>Implementing Lean Mfg at random point processes does little to improve the bottom line financial metrics. You end up with islands of perfection surrounded by a sea of chaos.</p> <p>True lean enterprise focuses on the value stream from door-to-door and assures smooth flow of information and material all along the way. It does little to balance flow through an assembly process to only have finished goods build up waiting for paperwork from sales.</p> <p>The nine VSM exercises simulate a complete value stream from customer to order entry to supplied material to production build and to delivery to the customer. As each point along the stream is improved, bottom line metrics keep the true impact visible. Only when the entire stream has been redesigned with true customer-demand pull are production velocity, quality and efficiency maximized and waste eliminated.</p> <p>The value stream map for each of the nine flow methods is provided, along with additional lean tools used during the lean redesign events.</p> <p>The series of events are designed to run for extended lengths of time, with materials flowing in a complete loop from raw materials through the production process and delivery and back to raw materials. Thus the event can be used in extended training sessions where the facilitator can focus on each lean concept and have enough time to experiment with the various influences on flow, the use of kaizen and continuous improvement tools, and bring in additional concepts of Heijunka planning, supply chain and customer pull kanban signal techniques, and inventory management.</p>
VSMgt – Value Stream Management	VSMgt USB	<p>This simulation exercise is an alternative to the larger and more complex VSM Loop simulation. It uses just one Car Factory kit of materials and presents a value stream for customer service using a door-to-door look at the paperwork forms, decision processes, and hands-on repair of customer returns.</p> <p>All materials for the simulation event are contained on the USB. The forms and flow may be printed and used as is, or a variety of customizations may be edited to provide the trainer with realistic flow situations from their own experience.</p> <p>Plan on at least one hour of pre-event prep time to configure the “customer returns” and print the forms. The two step event requires at least two hours.</p>

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Kanban – Full Value Stream Simulation	Kanban Simulation [Presentation and simulation included on the Deluxe Plus Kanban Package USB] or [Presentation and simulation included on the Kanban Upgrade USB]	<p>This full value stream simulation presents a car showroom to the random customer base, which as each car is selected the Kanban rules cause a replenishment pull from the car warehouse and ultimately from the factory and from the raw materials suppliers. Heijunka is presented as a method of leveling the factory in this random demand mixed model simulation exercise.</p> <p>All materials are presented in the <i>Deluxe Plus</i> Kanban package, or if you own a car factory kit – the Kanban Upgrade kit adds just the extra materials necessary for the full simulation experience.</p> <p>The simulation exercise is designed to provide the ability to focus on any aspect of the value stream – like train the planning and scheduling members of the team to deal with random demand, or teach work cell operators to understand the entire lean flow methods. The team set up is variable but works best with 10 people. The facilitator guide includes a printed and bound color guide book and PowerPoint presentation which provides a complete discussion of the Kanban control methods. The Facilitator guide lists things to observe and point out to the people, comments to add for clarity, and suggestions for improvement.</p>
Optional Training Event LM Large Group Simulation (5 to 39 hands-on participants) is a fast paced 4-step simulation that focuses on the 8-wastes.	LeanMan Large Group Simulation [file set on the LM Large Group Simulation USB]	<p>This 4-step simulation is designed to train large, but variable sized, groups of participants in the four main flow methods. The Evolution of Lean presentation (available on the Deluxe USB) begins the event and a few additional presentation materials, such as Learning to See the Waste, are recommended but require additional time.</p> <p>The team set up is variable between 5 and 13 people each with hands-on participation for each Car Factory Kit used. The 84-page facilitator guide allows up to three Car Factory Kits to be run simultaneously for a maximum of 39 participants with hands-on time accommodated.</p> <p>A single facilitator can easily control the teams, provided the participant placemats located on the USB are printed and distributed. The simulation includes a printed and bound color 84-page facilitator guide which provides lists of things to observe and point out to the people, comments to add for clarity, and suggestions for improvement.</p> <p>Requires one Deluxe Kit minimum, and can support up to two additional Companion Kits, or one Deluxe Plus VSM Package and one Companion Kit. Event time 2.5 hours plus additional presentation time, if any. Room size should be large training room or conference center.</p> <p>This presentation event is available for purchase only to clients who also purchase (or have purchased in the past) the LeanMan Car Factory Kits. Materials include the color printed and bound Facilitator Guide, two 450 pc dispenser packs of detail components, and all supporting files on USB.</p>

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LM Heijunka Simulation	<p>Heijunka Simulation Facilitator Guide [Presentation and simulation included on the Deluxe Plus Heijunka Package USB, or the optional add on Heijunka Upgrade Package]</p> <p>NOTE: Heijunka training should follow the standard lean training on the five principles of lean using the car factory simulations. Heijunka will then enhance the understanding of flow by bringing into the simulation mixed model scheduling techniques.</p>	<p>This presentation event is part of the Deluxe <i>Plus</i> Heijunka Training Package, or it can be obtained as an optional purchase for use with the standard Deluxe and Deluxe <i>Plus</i> VSM Car Factory Kits. The "Leveling the Waves" presentation presents an alternate way of approaching the function of master scheduling and planning for a lean manufacturing environment.</p> <p>Creating a smooth level work flow out of the chaotic and random customer demand is a challenge in a lean shop, and requires a managed disconnect from the MRP push. The Heijunka simulation exercise develops a unique approach to visualization of work flow, allowing the planning function to gain control over capacity issues and assure on-time delivery in a mixed-mode production work cell.</p> <p>The simulation exercise is designed to train the planning and scheduling members of the team, but is also an excellent tool to teach work cell operators lean flow methods. The team set up is variable but works best with 10 people. The facilitator guide includes a printed and bound color 48-page guide book and PowerPoint presentation which provides a complete discussion of the Heijunka control methods and includes animated visual simulations of the Heijunka flow in the PowerPoint slideshow. The Facilitator guide lists things to observe and point out to the people, comments to add for clarity, and suggestions for improvement.</p> <p>Requires one Deluxe <i>Plus</i> Heijunka Package, or the upgrade package for a standard Deluxe or Deluxe <i>Plus</i> VSM Package.</p> <p>Event time is approximately 2 hours for the slideshow presentation and simulation, but allow additional time to experiment with alternate flows. Room size should be a training room or large conference room with at least three tables and room for 12 people. Materials include the color printed and bound Facilitator Guide, a 6x6 Heijunka Box, 16 Heijunka kanban cards, 16 Job Ticket order cards, two 450 pc dispenser packs of detail components, and all supporting files on USB, plus all of the standard simulation materials included with the standard Deluxe Kit. All materials are packaged in a single double deep container for easy transport and setup.</p>