LEAN MANUFACTURING EXCELLENCE



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Introduction

A factory can hold world-class equipment and still lose money on changeover time, work-in-progress inventory, and defects nobody traced to their source. Lean manufacturing addresses those losses as a system, not a collection of tools, and it works only when shop floor discipline and management routine reinforce each other. This Lean Manufacturing Excellence Training Course gives production, quality, and operations professionals a complete working method for building that system. Participants learn the Toyota Production System, the seven wastes, takt and flow, standard work, total productive maintenance, and daily management. Furthermore, the course connects shop floor improvements to measurable cost and delivery results.

Lean Manufacturing Excellence Course Objectives

- Apply the Toyota Production System and its core principles to production.
- Identify and quantify the seven wastes on the shop floor.
- Calculate takt time, cycle time, and required capacity.
- Design flow, cell layout, and one-piece flow arrangements.
- Apply SMED to reduce changeover and setup time.
- Implement standard work and visual management on the line.
- Apply total productive maintenance with OEE measurement.
- Use kanban and pull systems for production and material control.
- Apply poka-yoke and quality-at-source practices to reduce defects.
- Measure improvement with OEE, lead time, scrap rate, and productivity.

Course Methodology

- Facilitated sessions built on real process maps, production data, and downtime records.
- Case workshops on changeover losses, defect escape, and line imbalance.

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- Takt, OEE, and capacity calculation exercises with live line data.
- Gemba walk, standard work, and SMED practice sessions.
- Group exercise on a lean manufacturing transformation plan with targets.

Who Should Take This Course

- Production and manufacturing managers.
- Industrial and process engineers.
- Quality engineers and continuous improvement staff.
- Maintenance and reliability supervisors.
- Production planning and materials controllers.
- Operations directors and plant leadership.

Lean Manufacturing Excellence Course Outlines

Day 1: Lean Principles and the Toyota Production System

- Origins of the Toyota Production System and the lean philosophy.
- Value definition from the customer's perspective.
- The seven wastes and the eighth waste of unused talent.
- Value stream thinking across the manufacturing process.
- Just-in-time and jidoka as the two pillars.
- Lean terminology and its shop floor translation.
- Lean maturity assessment and where to start.

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Day 2: Takt, Flow, and Layout

- Takt time calculation from customer demand.
- Cycle time, lead time, and capacity analysis.
- Bottleneck identification and constraint management.
- Continuous flow and one-piece flow design.
- Cell layout and line design principles.
- Work-in-progress reduction and queue elimination.
- Level loading and heijunka scheduling.

Day 3: Standard Work, SMED, and Workplace Design

- Standard work definition, documentation, and validation.
- Work element analysis and time observation.
- Job instruction training method.
- SMED methodology for changeover reduction.
- 5S and visual management on the shop floor.
- Ergonomic and safety considerations in line design.
- Auditing and sustaining standards over time.

Day 4: Total Productive Maintenance and Reliability

- TPM pillars and the role of autonomous maintenance.
- OEE calculation: availability, performance, and quality.
- Downtime analysis and loss categorisation.
- Planned maintenance and spare parts strategy.
- Root cause analysis for repeat breakdowns.

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- Operator involvement and equipment ownership.
- Reliability improvement planning.

Day 5: Quality, Pull Systems, and Daily Management

- Poka-yoke and error-proofing techniques.
- Jidoka, andon, and stop-the-line practice.
- Kanban and pull system design for production control.
- Kaizen events and A3 problem solving.
- Daily management, tiered meetings, and shop floor KPIs.
- Cost of poor quality and improvement benefit tracking.
- Building a lean manufacturing roadmap with phased targets.

Conclusion

By successfully completing the Lean Manufacturing Excellence Training Course, participants will have acquired a working command of the Toyota Production System, waste identification and value stream thinking, takt and flow design, standard work and SMED application, total productive maintenance with OEE measurement, pull and kanban systems, quality-at-source practice, and daily management routines. They will leave able to find where the plant loses time and material, remove those losses in a controlled way, and sustain the results. Gentex Training Center delivers this programme with manufacturing and lean practitioners working on live production lines.

FAQs for the Lean Manufacturing Excellence course

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Q1 What is the "Lean Manufacturing Excellence" course about?

It is a five-day programme on building a lean production system rather than applying isolated tools. It covers the Toyota Production System and the seven wastes, takt and flow design, standard work and SMED, total productive maintenance, pull systems and kanban, quality-at-source practice, and daily management.

Q2 What are the key benefits of the "Lean Manufacturing Excellence" course?

Participants cut lead time and work-in-progress by designing flow instead of adding capacity, reduce changeover losses with SMED so smaller batches become practical, and raise equipment availability through TPM and OEE discipline. They also reduce defect escape with error-proofing and trace losses to specific cost lines.

Q3 What skills will I gain from the "Lean Manufacturing Excellence" course?

You will gain lean system design and value stream analysis, takt, flow, and layout engineering, standard work, SMED, and TPM application, and quality-at-source, pull system, and daily management implementation.

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Q4 What tools, methods, or standards are covered in the "Lean Manufacturing Excellence" course?

The course works with the Toyota Production System and its just-in-time and jidoka pillars, the seven wastes and value stream analysis, takt time, cycle time and capacity calculation, bottleneck and constraint analysis, continuous flow and one-piece flow design, cell and line layout principles, heijunka level loading, standard work definition and work element analysis, time observation, job instruction training, SMED changeover reduction, 5S and visual management, TPM pillars and autonomous maintenance, OEE calculation covering availability, performance and quality, downtime analysis and loss categorisation, planned maintenance and spare parts strategy, root cause analysis including the five whys and fishbone diagram, poka-yoke error proofing, jidoka and andon practice, kanban and pull system design, kaizen events, A3 problem solving, tiered daily management meetings, and KPIs covering OEE, lead time, scrap rate and productivity.

Q5 How is the "Lean Manufacturing Excellence" course applied in real-world practice?

Teams apply it when calculating takt time for a new product line, running a SMED workshop on a stamping press, rebuilding standard work after a process change, analysing OEE losses on a bottleneck machine, sizing kanban for a component line, and presenting an A3 improvement at a daily shop floor meeting.

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