



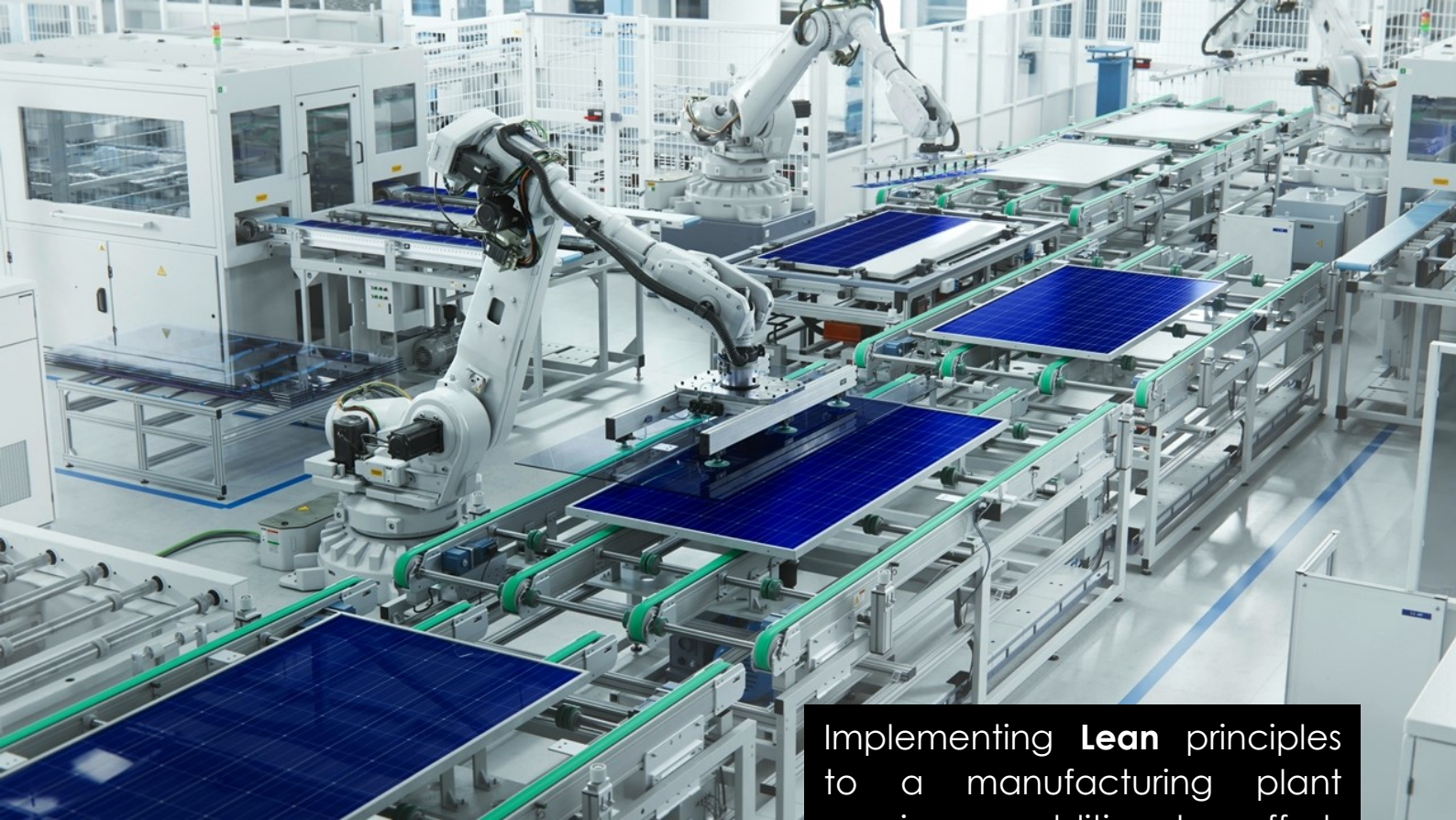
Building Manufacturing Excellence  
and World Class Manufacturing

Certification Program

# Certified Lean Black Belt in Manufacturing:

In building Lean Enterprises and  
high-performance  
Manufacturing Plants





# Certified Lean Black Belt in Manufacturing:

In building Lean Enterprises and high-performance Manufacturing Plants

This **Certified Lean Black Belt** program is designed to provide students with extensive amount of knowledge on Lean concepts highly needed for the Manufacturing sector. This program is designed to be aligned with ASQ, BQF, and other leading Industrial bodies. This program starts from the basic concepts of Lean and then progress towards advanced concepts such as improving the strategic capabilities and developing realistic KPIs needed in **building** Lean Enterprises and high-Performance Manufacturing plants.

This is an all-in-one comprehensive training program developed exclusively for **Manufacturing professionals** planning to get in to leadership roles, and to anyone committed with leading and managing Lean projects or Lean teams.

We have used an innovative visual-audio mixed teaching technique in delivering this program to make it **interesting** for the learners. Once the course is completed, we have made arrangements-

Implementing **Lean** principles to a manufacturing plant requires additional effort. However, the **benefits** that could be achieved by this are far **beyond** the efforts, which may even can prevent a company from being Liquidated.

-for you to obtain two Certificates. One from our hosting partner and other is the **official Certificate** issued by us, that can be used with your **Continuous Professional Development**. End of the course, we expect the learner should be able to;

- Understand all **Lean concepts** needed to lead and manage Lean projects and solve complex problems in any Lean environment.
- Eliminate manufacturing losses associating with **Muda, Mura, and Muri**.
- Optimize production cycles, plot Spaghetti diagrams and do **Value stream** mapping.
- Involve **Work Study** i.e. **method study** and **work measurements** to improve productivity.
- Understand and apply basics of **TPM**.
- Use the **Kaizen**, the Six Sigma **DMAIC**, the PDCA-SDCA cycles to solve problems in the Factory.
- Using **Change management** models.

- Develop a high-performance **workforce**, how to keep **employees** engaged, and build high performance **leaders** for factories.
- The **6 big losses** and other production losses.
- Involve **advanced 5S** i.e. **6S** concepts to increase the effectiveness of the production floor.
- Involve the seven quality tools, then **why-why analysis**, answer question analysis, and many other tools for problem solving.
- How to improve the Factory layout and the setup and improve the **working conditions**.
- Learning how to use **Research methods** for **real time** problem solving related to manufacturing.
- Learning about, **A3** problem solving, **FMEA** in problem solving, mistake preventing, and etc...
- Identify and improve **Strategic Capabilities** in a Manufacturing firm.
- Elements of the **Toyota Production System**.
- The fundamentals of **JIDOKA** and **Industry 4.0**.
- Develop **KPIs** for **Lean Enterprises** to ensure the organization is competitive.

## Why follow this course?

It is proven that knowledge on Lean Manufacturing is highly useful for any **working professional** to achieve continuous professional development. The concepts you'll learn in this course is applicable to **most of the industries** such as; Industrial manufacturing, Garment, Automobile and Heavy machinery, Food production, and etc....

**Employees** from leading organizations as listed below and from more have trusted our Training Programs.





# What you will Learn?

This course starts with the basics of Lean and then progress towards advanced Lean manufacturing concepts. The course content is listed below;

## **Section 1: Introduction**

- 1.1 Introduction to the course.
- 1.2 Introduction to Lean Manufacturing.
- 1.3 Role of a Lean Black belt professional.

## **Section 2: Elimination of production losses**

- 2.1 The Eight forms of Muda.
- 2.2 Mura and Muri.

## **Section 3: Lean Concepts in Manufacturing**

- 3.1 Push vs Pull Production and JIT.
- 3.2 The Kanban System.
- 3.3 Heijunka.
- 3.4 Single Piece Work Flow.

## **Section 4: Lean Measures**

- 4.1 Throughput Time and Lead time.
- 4.2 Takt Time.
- 4.3 Little's Law.
- 4.4 Cycle Time and Line balancing.

## **Section 5: Lean and Production optimizing**

- 5.1 Spaghetti Diagram.
- 5.2 Value stream mapping.

## **Section 6: Lean and Work study**

- 6.1 Work Flow diagrams.
- 6.2 Flow charts.
- 6.3 Flow Process charts.
- 6.4 Multiple Activity charts.
- 6.5 Time study.
- 6.6 Developing the Standard Time value.

## **Section 7: Employee engagement**

- 7.1 Employee engagement and Quality Circles.

## **Section 8: Focus in manufacturing**

- 8.1 Managing focus in Manufacturing.

## **Section 9: TPM and Lean Enterprises**

- 9.1 What is TPM.
- 9.2 The Benefits of TPM.

## **Section 10: The 6 Big Losses and OEE Calculation**

- 10.1 The 6 Big losses in manufacturing.
- 10.2 How to calculate OEE.
- 10.3 World class manufacturing standards.

## Section 11: The 7-Quality tools

- 11.1 Graphs (bar charts and pie charts).
- 11.2 Ishikawa diagram.
- 11.3 Check sheets.
- 11.4 Histograms with Excel based Examples.
- 11.5 Pareto Charts with Excel based Examples.
- 11.6 Scatter Plots.
- 11.7 Run Charts with Examples.

## Section 12: Famous tools for Lean Managers

- 12.1 The Why-why Analysis.
- 12.2 Project Priority matrix.
- 12.3 Gantt charts for Project planning.
- 12.4 Project Charter.
- 12.5 Fundamentals of Research and Data analysis.

## Section 13: Kaizen and the Six Sigma Process

- 13.1 What is Continues Improvement.
- 13.2 The Kaizen Cycle and the application of it.
- 13.3 Six Sigma DMAIC cycle and using this cycle for problem solving with Example.

## Section 14: Lean and Change Management

- 14.1 Kurt Lewin's Change model with Examples.
- 14.2 John Kotter's 8-step Change model.

## Section 15: Using the PDCA-SDCA cycles

- 15.1 Application of the PDCA and SDCA cycles.

## Section 16: A3 problem solving culture

- 16.1 A3 problem solving and report writing.

## Section 17: Failure mode effect analysis

- 17.1 FMEA analysis in problem solving.

## Section 18: Poka Yoke and Lean Enterprises

- 18.1 What is Poka Yoke in manufacturing.
- 18.2 The Andon system.

## Section 19: The 5S i.e. 6S system for Factories

- 19.1 Introduction to the 6S system.
- 19.2 How to achieve Sort (Seiri 整理).
- 19.3 How to achieve Set in Order (Seiton 整頓).
- 19.4 How to achieve Shine (Seiso 清掃).
- 19.5 How to achieve Standardize (Seiketsu 清潔).
- 19.6 Sustain (Shitsuke しつけ) the 5S System.
- 19.7 Creating a 5S implementation plan and a 5S Communication board.
- 19.8 How to do a 5S audit.
- 19.9 How to achieve Plant Safety, the 6<sup>th</sup> S element.



## **Section 20: What is Gemba Walk**

20.1 Gemba and Gemba walk in Factories.

## **Section 21: Plant layout optimizing**

21.1 The famous Plant layout types.

21.2 Mix Layout type.

21.3 Improving production performance with Improved working conditions.

## **Section 22: JIDOKA and IIoT in manufacturing**

22.1 JIDOKA in a Production environment.

22.2 IIoT or Industry 4.0 in manufacturing.

## **Section 23: Strategic organizational Capabilities**

23.1 Strength Checklist for Manufacturing firms.

23.2 How to do a PESTEL analysis.

23.3 Preparing a SWOT analysis.

23.4 Analysing Strategic Capabilities of a manufacturing firm.

## **Section 24: Leadership and Human Resource Management for Manufacturing firms**

24.1 Famous leadership styles.

24.2 Situational Leadership theory for Lean Enterprises, and building leaders internally.

24.3 Strategic Human Resource Management for manufacturing firms.

24.4 Building a Strategic Human Recourse model.

## **Section 25: The Toyota Production System**

25.1 Introduction to Toyota Production System.

25.2 The 4Ps and the 14 Toyota way.

25.3 Combining TPS and Lean.

## **Section 26: Production Performance and KPIs**

26.1 Evaluating Production Performance.

26.2 Developing KPIs for Lean Enterprises.

## **Section 27: The Final Section**

27.1 How to take the Final Exam and obtain the official Black Belt Certification.

27.2 The final Lecture.

This course extensively involves the use of **Excel**, in the scope of a Lean Manger and we recommend the learner to use Microsoft Excel 2016 and above or any similar software package. The official **The ISSK** Certificate will be issued only if the students have **successfully** obtained the passing criteria of the Final Exam, which is attached in the course.



# Obtain your Certificate

The **official** certificate from The ISSK will be issued only if the student has successfully completed this course and have passed the Final Exam, you can find more information about it in the course.

You may follow the following procedure to obtain your official Certificate.

- Step 1** Initially complete **all the Lessons** and the **Quizzes**.
- Step 2** Then download the **Exam Paper** (folder) attached in the last section.
- Step 3** Answer the questions in the best form in the **Provided blank answer sheet**, and send it to us (to: [hello@theissk.com](mailto:hello@theissk.com)).
- Step 4** If you have Passed the final Exam, then you will receive your **Official 'The ISSK TPM Certificate' + Your 'CPD Certificate'** as shown, completely Free of charge.

The e-versions (PDF files) of the Certificates will be issued completely **Free of charge** and whoever obtains it will become eligible to receive the **Printed version** of the Certificates. Students will need to request the printed versions or the certificate pack separately bearing the shipping cost.

Any of the **certificates** issued by us can be verified by sending the authorizing ID of the certificate to the mailing address, [certification@theissk.com](mailto:certification@theissk.com). And the **CPD certificate** can be verified from the **website** of our CPD partner. A sample of the CPD Certificate is shown in the introductory lesson and can be **downloaded** from our website.



Demonstrate your skills with your globally recognized CPD Certificate from Open-CPD.

The certificate features the logo of The Institute for Six Sigma and Kaizen (vi σ Kai Zen) at the top center. To the right are two circular logos: 'The Institute for Six Sigma and Kaizen CERTIFIED' and 'The Institute for Six Sigma and Kaizen CERTIFIED LEAN BLACK BELT IN MANUFACTURING'. The main text reads: 'The Institute for Six Sigma and Kaizen Awards the title of Certified Lean Black Belt in Manufacturing: In building Lean Enterprises and high-performance Manufacturing Plants to Your Name'. Below this is a line for a signature and the text: 'For successfully completing the formal evaluation where by demonstrating outstanding knowledge and competence over the relevant subject area.' At the bottom right is the CPD logo with 'With The ISSK' and a QR code. The bottom left corner has a black box with 'EDU-CLBB-10014' and 'Authorizing ID'.

# Role of a LBB Professional

A Lean Black Belt Professional is expected to **lead** a **team** of lean, lean six sigma, or the continuous improvement associates or executives. In many organizations a **LBB Professional** will be hired as the **Lean Manager**, as seen with the management structure illustrated below, to manage and lead its Lean, Lean Six Sigma, or Continuous Improvement projects. Generally, any organization prefer a Lean Manager to have;

- i. Should have a Degree in Engineering, Industrial management, Operations management, or in related field.
- ii. A Masters or MBA is always advantageous.
- iii. A Black Belt Level training in Lean Manufacturing.
- iv. Few years of experience in Leading and Managing Lean projects.
- v. Good knowledge about Production operations that is similar to what is seen in the factory.
- vi. Some knowledge about production machines, and equipment maintenance.
- vii. Good team management skills, communication skills, and other soft skills needed for most of the managerial roles in the industry.

And in some instance a Lean Black Belt Professional may work as the **Continuous Improvement (CI)** team Manager or as the In-charge of Continuous Improvement projects. And it is recommended for most of the senior roles in the production sector to complete a Lean Black Belt training.

A Lean Black Belt professional is a **highly** respected and recognized professional in the manufacturing **industry** with a well provided **salary** and other benefits. Therefore, we welcome you to enroll with this program and own that status.

**Hurry!** Obtain your The ISSK TPM Certification + your Globally recognized CPD Certificate with a 30-Day Money back Guarantee, **via**



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**Best Offers!**

