

# **INTELLCERT GMBH**

# **OUR SOLUTIONS**

# Six Sigma Black Belt Training



**Empowering Excellence  
Through Expert Training**

# About Us

## Your Partner for Intelligent Solutions

Founded by experts with decades of relevant professional experience, intellcert GmbH, based in Berlin, Germany, offers a diverse range of services worldwide.

We aim to actively support you in improving your products', processes, and systems' safety, quality, and performance. We strive to minimise risks, enhance competitiveness, and build trust with customers and stakeholders. Our internationally recognised certificates open up new markets for you.

Operating in various industries and sectors, including industry, healthcare, education, energy, environment, and transportation, our dedicated and experienced team values expertise, reliability, and customer-centricity.

We don't see ourselves as service providers but as your trusted partner for "Business Excellence." We look forward to accompanying you on your path to success.



# intellcert's Experience in Training Quality Leadership

## World-Class Experience, Local Support

With decades of accumulated founders' experience in the certification industry, intellcert GmbH is a globally recognised leader in helping companies navigate the complex Processes, regulations and standards. From product-specific certifications to environmental and quality management systems, we offer comprehensive services designed to meet the highest international requirements.

intellcert works with leading authorities, organisations and institutes, to ensure that your organisation's processes, products, and systems comply with all relevant regulations. Our global reach allows us to provide tailored training and certification solutions, ensuring your company meets the targetted standards required for market entry, safety compliance, and operational excellence.

# Certification and Training Matters

In highly competitive markets, achieving excellence is more than a goal, it is a necessity. Lean Six Sigma training is crucial for organizations committed to maintaining the highest standards of quality and operational efficiency. Businesses will streamline processes, reduce waste, and improve overall performance, demonstrating their dedication to operational excellence and customer satisfaction if they adopt Six Sigma methodologies.

Adherence to internationally recognized quality standards not only ensures the delivery of superior products and services but also enhances a company's reputation for reliability and efficiency. Six Sigma principles opens doors to new markets, fosters stronger relationships with stakeholders, and provides a competitive edge in a rapidly evolving global landscape.

# Overview

The Six Sigma Black Belt course attendees will be experts in methodology, statistics, and successful Six Sigma projects. They are able to plan, lead and implement complex Six Sigma projects.

In addition, they act as a competent consultant for operational management. Since during this training, they work on a Six Sigma project of their organisation, both attendees and organisation benefit from seamless know-how transfer into operational practice. They can directly demonstrate initial success based on specific savings potential.

Project-related coaching takes place during the training. The training is divided into four modules of five days each and helps – with appropriate planning – to transfer the learned contents of the module directly into the project practice.

# Lean Six Sigma Black Belt Training

- Four Modules
  1. *Module 1: Introduction and Organisational Framework*
  2. *Module 2: Measure: Process Evaluation and Performance Measure*
  3. *Module 3: Influencing Factors on a Process*
  4. *Module 4: Capstone; Ensuring lasting Improvements*
- Each module takes 5 days
- Online or in person
- Tailored-fit to your organisational needs.
- Consultation to cover your specific needs

# Values

- **Business Optimization:** Enhance efficiency and profitability with strategy-driven Six Sigma tools.
- **Advanced Process Analysis:** Identify and eliminate inefficiencies using robust analytical techniques.
- **Data-Driven Decisions:** Leverage data for impactful, evidence-based decision making.
- **Sustainable Improvement:** Ensure long-term quality improvements with SPC and Lean methods
- **Professional Certification:** Gain a Six Sigma Black Belt, potentially jointly with a German university, showcasing your expertise in process excellence.



# Module 1

## Introduction and Organisational Framework

Introduction to the Six Sigma principle

Explanation and application of strategy-oriented business optimization

Organizational framework conditions for the successful integration of Six Sigma

Project management and the standards of the DMAIC project phases

The high-performance project team and interpersonal dynamics

Define (D- of DMAIC): Define the project and formulate the project assignment

- Customer requirements (Voice of Customer)
- Planning techniques and relevant key figures
- Objectives and profitability calculation (benefit)
- Concretization of the training project

# Module 2

## Process Evaluation and Performance Measure

Determine and prioritize customer-relevant factors with QFD  
Process recording: value stream mapping, flow charts and process visualization  
Modeling of process parameters and C&E matrix  
Basics of descriptive statistics, introduction to Minitab  
Continuous and discrete distribution models  
Advanced analysis of time series  
Measurement system analysis (Gage R&R)  
Process key figures and analysis of process capability  
Review and coaching of training projects

# Module 3

## Influencing Factors on a Process

The process and its influencing factors

1. Root cause analysis in the process context: 5-Why, Ishikawa diagram, Pareto analysis
2. Additional lean methods and tools for process analysis and improvement
3. Data-based analysis of the process and determination of important influencing variables
4. Sampling methods and strategies
5. Statistical tests and analysis methods (e.g. t-test, ANOVA)
6. Correlation and regression analyses

Determine key process factors and their interactions using statistical design of experiments (DOE)

- DOE, screening and optimization tests
- Complete and partial fractional 2k tests

Process improvement - determine optimum parameters

- CCDs
- Step-by-step optimization process

Review and coaching of training projects

# Module 4

## Capstone; Ensuring lasting Improvements

Statistical process monitoring - SPC

Lean methods and tools for standardization and evaluation

Introduction to Design for Six Sigma - DFSS

Review and coaching of Six Sigma Black Belt projects

**Written examination (multiple-choice procedure).  
Duration: 4 hours. The exam takes place on the last  
training day of module 4.**

# Outcomes

- **Leadership and project management:** Pacing and Leading, SMART goals, Feedback 2.0, Solving Conflicts, GROW Coaching, STAR method, Team Phases, Team Leadership, Team Management and Key Figures, Team Building.
- **Change management:** The change curve, change management in Six Sigma projects, comfort zone and much more.
- **Lean management tools:** Setting up a project charter correctly, business case calculation, process cost calculation, risk management in Six Sigma projects
- **Project management:** Overview/revision of D-M-A-I-C, project start and planning, SIPOC, VoC, value stream analysis, Makigami, Ishikawa, brainstorming, risk analysis



# Outcomes (continued)

- **Statistical methods:** Introduction and basic concepts, scale levels, probability theory, discrete distributions, process capability, process models, statistical tests (ANOVA, parameter tests, goodness-of-fit tests, tests for normally distributed and discrete characteristics, sign tests)
- **Design of Experiments (DOE):** Method for planning, conducting, and analysing experiments; optimisation of processes and products; identification of critical factors.
- **Design for Six Sigma:** Basic terms in the context of Design for Six Sigma
- **Practical examples and exchange of experiences:** Practical examples, exercises guided group discussions, group work.

# Learning Approache

- **Workshop not a lecture:** The course consists mainly of workshop elements and is paired with theoretical input.
- **Teamwork:** Practical applications of the tools and methods are of essential importance.
- **Joint development:** Joint live development of the script's contents with the trainer.
- **Flipcharts:** Our prepared flipcharts provide a clear overview and easy-to-read presentations without relying on the lecturer's handwriting.
- **DOE exercise:** A practical exercise that brings the Design of Experiments to life.
- **Real-world case studies and exercises:** Illustrate the central theme using recognisable examples and practical applications.
- **Interactive:** Everyone is encouraged to share their experiences and exchange ideas with others.

# Assessment

- **At the end of the seminar, a “Six Sigma Black Belt” exam is administered. The certificate is awarded upon passing the exam and meeting all requirements, confirming the successful completion of the training and skills assessment.**
- **Project Reviews: Participants undertake an improvement project during the training, with progress presented in short sessions. Feedback is provided by the trainer and peers.**
- **Project Completion Report: The final project report is submitted for review. Approval is granted if no major revisions are needed, and feedback is provided promptly.**

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Certification, Inspection, Test, and Training

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