



**EXCENOR**  
— GLOBAL —  
In Pursuit of Excellence

# AI Enabled Lean Six Sigma Black Belt Training

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January 2026



# The AI-Enabled Lean Six Sigma Black Belt

Mastering the Future of Process Improvement

Your complete roadmap to AI-enabled process excellence and continuous improvement mastery

Duration : 60 hrs

Mode: Classroom/Online

Eligibility-UG/PG Students/Faculty/Working

Professionals(Private/Govt.)/Startup Founders with Green Belt certification



# The Evolving Landscape of Process Excellence

How artificial intelligence is reshaping the core competencies, tools, and strategic role of the Lean Six Sigma Black Belt in modern organizations.

# Beyond the DMAIC Framework: A New Era

## Traditional Black Belt Focus

Mastering Define, Measure, Analyse, Improve, and Control with advanced statistical tools — the bedrock of every certified Black Belt.

## The AI Imperative

Integrating AI to enhance predictive capabilities, automate complex analysis, and drive smarter, faster strategic decision-making at scale.

## IASSC Standard Evolved

The foundational Body of Knowledge remains critical — but AI integration is the undeniable next frontier for competitive process excellence.



# AI in the Define Phase

## Intelligent Project Selection

Transforming how Black Belts identify, evaluate, and prioritise improvement opportunities using AI-powered insight engines.

# Predictive Project Identification



## AI-Powered Voice of the Customer

Analysing vast datasets — social media, reviews, support tickets — to proactively surface pain points before customers escalate them through NLP

## Automated Business Case Generation

AI sifts through financial data and market trends to generate compelling project charters and ROI forecasts with minimal manual effort.

## Strategic Alignment Engine

AI ranks potential projects against organisational goals, prioritising initiatives with the highest predicted impact and value delivery.

# AI in the Measure & Analyze Phases

## Deep Dive Diagnostics

Moving from manual data collection to intelligent, real-time insight generation — uncovering root causes that traditional methods miss.



# From Data Collection to Insight Generation

## Intelligent Measurement Systems

AI-driven sensors provide real-time process monitoring and instant anomaly detection, eliminating lag in quality feedback loops.

## Advanced Statistical Modelling

Machine learning enables complex pattern recognition and predictive analytics well beyond traditional SPC or regression techniques.

## Automated FMEA & Risk Assessment

AI rapidly identifies potential failure modes and prioritises mitigation, reducing weeks of manual risk analysis to hours.

## Black Belt in Action

An AI system analyses continuous sensor data from a manufacturing line, predicting equipment failure **days in advance** — shifting the team from reactive firefighting to proactive prevention.



Outcome: 30–40% reduction in unplanned downtime in leading implementations.



# AI in the Improve & Control Phases

## Adaptive Solutions

Deploying AI not just to fix problems — but to build self-optimising systems that sustain gains and continuously improve on their own.

# Smarter Solutions, Continuous Optimization



## AI-Driven Solution Design

Machine learning recommends optimal process configurations based on historical performance data and simulation modelling.



## Automated Process Control

AI systems dynamically adjust parameters in real time — such as chemical dosages in water treatment — ensuring consistent quality output.



## Predictive Control Charts

Moving beyond reactive SPC monitoring to proactive adjustments based on AI forecasts of future process behaviour and drift.

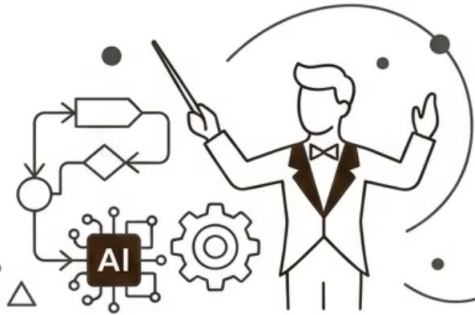


# The AI-Enabled Black Belt

## A New Skillset for a New Era

The Black Belt of tomorrow is not just a statistical expert — they are a strategic leader, an AI navigator, and an organisational change architect.

# The Future Role: Strategic Leader & AI Navigator



## 1. Orchestration

Leading AI-driven improvement initiatives



## 2. Ethical AI & Data Governance

Responsible and transparent use of AI



## 3. Continuous Learning

Adapting rapidly to new tools and methodologies



## 4. Mentorship

Coaching Green Belts to leverage AI in their projects

### From Tool Expert to Orchestrator

Black Belts no longer operate tools alone — they orchestrate AI-driven ecosystems, directing data pipelines, model outputs, and cross-functional teams.

### Ethical AI & Data Governance

Understanding algorithmic bias, data privacy, and model transparency is now a core Black Belt responsibility, not an optional add-on.

❑ The AI-Enabled Black Belt is the bridge between statistical rigour and intelligent automation.



# The AI-Powered Future of Lean Six Sigma

## Driving Unprecedented Excellence

### Predict

Anticipate defects and failures before they occur using intelligent analytics.

### Optimise

Continuously tune processes with AI that learns and adapts in real time.

### Lead

Guide organisations through the next evolution of operational excellence.

To know more about our LSS trainings

Contact Us



**Uttam Biswas**

**Practice Head-PEX, Digital & AI**

[uttam.biswas@excenorglobal.com](mailto:uttam.biswas@excenorglobal.com)

**+91 7899741137**



**Rachna Hooda**

**Executive – Operations & Coordination**

[rachna.hooda@excenorglobal.com](mailto:rachna.hooda@excenorglobal.com)

**+91 9319711609**