

International Management Research
and Technology Consortium – LLC - USA

AI CLSSBB AI CERTIFIED LEAN SIX SIGMA BLACK BELT



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Bridging The Gap Between
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Published by

International Management Research and Technology Consortium

IMRTC

Principal Office: P. O. Box 409, 9300 Conroy Windermere, Windermere, FL-34786, USA,

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AI-CERTIFIED LEAN SIX SIGMA BLACK BELT (AI-CLSSBB)

INTRODUCTION

There is a global need of market and requires competent Six Sigma Certified Green Belt Managers, who know about the Lean process and optimization of business processes with business process re-engineering techniques and methodologies. Being a recognized consortium, IMRTC devise a comprehensive curriculum of lean six sigma black belt with emerging technologies of AI. IMRTC recognize the need of market with the consultation, senior members, executives and consultants and has come up with a comprehensive certification program that is **AI CERTIFIED LEAN SIX SIGMA BLACK BELT (AI - CLSSBB) (AICLSSBB)**

ABOUT AI-CLSSBB

AI-LEAN SIX SIGMA BLACK BELT – CLSSBB is required to develop the necessary expertise and skills for Quality, Production, Operations, and Service related people. The ultimate goal of this certification is: the management can increase the productivity of the organization by reducing cost effective outcomes through lean processes and using of latest advanced technology of AI (Artificial Intelligence) to make it more effective and efficient. AI LEAN SIX SIGMA BLACK BELT – AI-CLSSBB covers the areas of Quality Cycle, Lean Management, Qualitative and Quantitative Assessment of Processes, and strategic approaches to operational Management of businesses through information technology ERP, and CRM systems. The program follows a systematic learning format with a hands-on approach including a lot of exercises, quizzes, audio-visual aids, case studies, practice sessions, and case studies for the development of the project.

AUDIENCE

Anyone belongs from Quality, Production, Manufacturing and/or Service Industry, can avail this excellent professional qualifications. It is most suitable for Managers, executive assistants and supervisor in any sector, who are involved directly or indirectly with it.

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AI CERTIFIED LEAN SIX SIGMA BLACK BELT (AI-CLSSBB)



THE CREDENTIALS

The Candidates who are looking to have this certification need a proper training of 48 Professional Training Hours (PTH) from any recognized institute and approved professional trainers of IMRTC. The program also required a self-develop project that depends on real cases where the candidate shall encounter the issues and challenges of the organization where to use the methodologies of Six Sigma and show to increase the productivity of the organization. The project is required in soft form and submit to our concerned training partners or chapters for assessment and after approval of it, candidate can sit in the final examination of IMRTC. After passing the examination, the candidates can use the credentials AI CERTIFIED LEAN SIX SIGMA BLACK – AI CLSSBB with their names.

PRE-REQUISITE:

Bachelor's degree (high school professional diploma, associate's degree or the global equivalent)

2-3 years of professional experience in Quality, Manufacturing or Any Service Industry

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A black and white photograph of a city skyline, featuring several tall buildings and skyscrapers. Overlaid on the center of the image is a dark rectangular button with the text 'JOIN NOW' in white capital letters.

AI – CERTIFIED LEAN SIX SIGMA BLACK BELT (CLSSBB)



PROFESSIONAL BENEFITS OF PROGRAM

A **AI-Certified Lean Six Sigma Black Belt (AI-CLSSBB)** is a valuable credential that demonstrates expertise in improving processes, reducing waste, and driving quality improvements. Here are the key benefits of earning this certification:

1. Career Advancement

- A AI-CLSSBB certification enhances your resume and makes you a strong candidate for leadership and managerial roles in various industries.
- Employers value professionals who can drive process improvements and manage cross-functional teams effectively.

2. Increased Earning Potential

- Certified professionals often earn higher salaries due to their specialized skills and ability to deliver measurable business results.
- A Six Sigma Black Belt certification is often associated with premium roles in organizations.

3. Expanded Career Opportunities

- Industries such as manufacturing, healthcare, IT, finance, logistics, and consulting frequently seek Lean Six Sigma Black Belts.
- The certification demonstrates versatility and relevance across sectors.

4. Leadership Skills

- Black Belts are trained to lead and mentor teams, fostering leadership qualities essential for project and change management.

A grayscale image of a city skyline, featuring several tall buildings and skyscrapers, including the Transamerica Pyramid.

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PROGRAM STRUCTURE

Total Domains	10
Lectures	Lectures can be delivered through partners and trainers
Accredited Trainers	Can Deliver the lectures
One Credit Hour	10 Learning Hours
Total Credits Required	4.8 Credit Hours
Registration Process	Register through our partners / Trainer
Assessment	Online / Paper based
Passing Criteria	70 percent



PROGRESSION OF THE PROGRAM

Total Credentials	=	4.8 Credit Hours
One Credit Hour	=	10 Learning hours
Final Assessment	=	Online or physical assessment shall be taken by IMRTC Examination Department

AWARDING OF AI-CLSSBB CERTIFICATION

After getting 70 percent marks from the examination, the candidate will be awarded the AI-CLSSBB Certification from IMRTC USA.



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COURSE CONTENTS

Certified Lean Six Sigma Black Belt Covers theory, process and practices of Lean and Six sigma skills.

DOMAIN 1: Enterprise-Wide Deployment

DOMAIN 2: Define Phase

DOMAIN 3: Measure Phase

DOMAIN 4: Analyze Phase

DOMAIN 5: Improve Phase

DOMAIN 6: Control Phase

DOMAIN 7: Lean Tools and Concepts

DOMAIN 8: Leadership and Team Management

DOMAIN 9: Advanced Statistics and Analytical Tools

DOMAIN 10: Certification Project



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DOMAINS AND TASKS

In this document, you will find an updated structure for the IMRTC Standard Examination Content. Based on Experience Consultants and stakeholders, we have devised and simplified the format so that the IMRTC Examination System can be easier to understand and interpret.

The domain and task are well-defined on the following pages:

Domain: Defined as the high-level knowledge area that is essential to the practice of AI-CLSSBB.

Tasks: The underlying responsibilities of the Quality Consultants within each domain area.

AI-CLSSBB Course examination will include all tasks for a domain and will adhere to the percentage of coverage at the domain level as outlined in the further pages.

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KNOWLEDGE AREAS

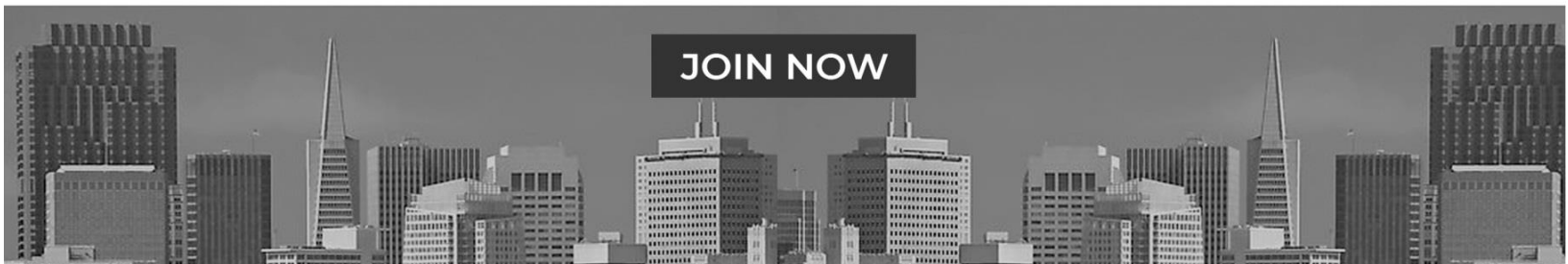
Domain 1: ENTERPRISE WIDE DEPLOYMENT	
Task 1	<p>Understanding Lean Six Sigma principles and concepts.</p> <p>Understanding of Lean and its importance</p>
Task 2	<p>Strategic alignment of Lean Six Sigma with organizational goals.</p> <p>Planning and Methodology</p>
Task 3	<p>Roles and responsibilities in a Lean Six Sigma environment (e.g., Champions, Black Belts).</p> <p>Understanding of Cultural Environments</p>
Task 4	<p>Organizational leadership and culture for Lean Six Sigma deployment</p> <p>Developing Leadership Quality and its systems</p>
Task 5	<p>Understanding of AI with fundamentals</p> <p>Understanding of Microsoft Co-Pilot or ChatGPT, Perplexity that how to use them with the strategic alignment of the organization</p> <p>Find & develop the appropriate organogram and set the enterprise resources.</p>



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KNOWLEDGE AREAS

Domain 2: DEFINE PHASE	
Task 1	<p>Project Identification and Selection</p> <p>Identifying improvement opportunities aligned with business objectives. Defining the scope and goals of the project.</p>
Task 2	<p>Voice of the Customer (VoC)</p> <p>Gathering and translating customer requirements into measurable objectives.</p>
Task 3	<p>Project Charter Development</p> <p>Documenting project objectives, scope, team members, and milestones.</p> <p>Stakeholder Analysis</p> <p>Identifying and managing stakeholders to ensure project success.</p> <p>Deploy NLP-based sentiment analysis to gauge employee readiness for cultural change.</p> <p>AI-generated change readiness reports for leadership before deployment.</p>
Task 4	<p>Apply AI-powered Voice of Customer (VoC) tools to analyze large volumes of customer feedback (emails, chats, social media) for pain points.</p> <p>Use Generative AI to auto-create project charters based on initial project briefings.</p> <p>Automate stakeholder mapping with AI network analysis of communication data.</p>



KNOWLEDGE AREAS

Domain 3: MEASURE PHASE	
Task 1	Process Mapping and Documentation Creating detailed process maps (e.g., SIPOC, value stream mapping).
Task 2	Data Collection and Sampling Designing data collection plans. Sampling techniques to ensure data reliability
Task 3	Measurement System Analysis (MSA) Evaluating the accuracy and precision of measurement systems.
Task 4	Descriptive Statistics Understanding central tendency, dispersion, and data distribution.
Task 4	Baseline Performance Metrics Calculating process capability indices (Cp, Cpk, Pp, Ppk).
Task 5	Integrate AI-based process mining software to automatically generate process maps from system logs. For Example; (Celonis, UiPath for Process Mining etc) Use AI anomaly detection to identify data irregularities.



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KNOWLEDGE AREAS

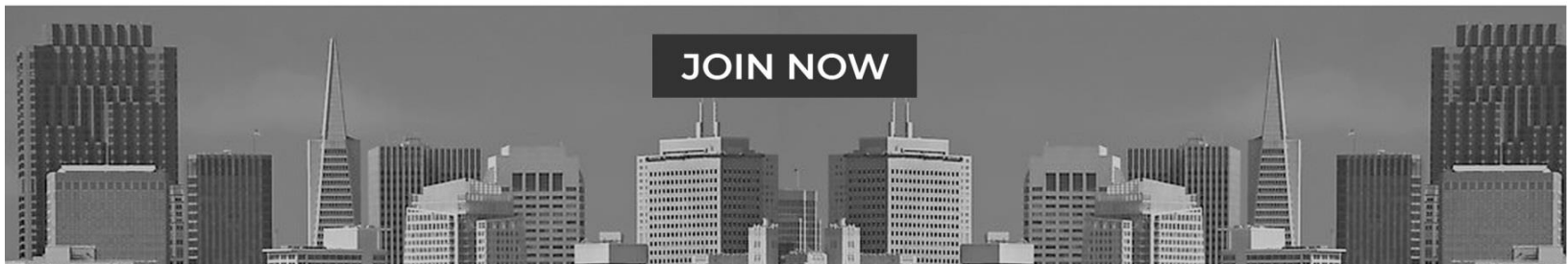
Domain 4: ANALYZE PHASE	
Task 1	Data Analysis Tools Hypothesis testing (e.g., t-tests, ANOVA, Chi-square tests). Correlation and regression analysis.
Task 2	Root Cause Analysis (RCA) Using tools like Fishbone diagrams, Pareto charts, and 5 Whys
Task 3	Failure Mode and Effects Analysis (FMEA) Identifying potential risks and their impact on the process.
Task 4	Process Variability Analysis Analyzing sources of variation in the process.
Task 5	Implement machine learning predictive models for root cause analysis. Use AI-enhanced FMEA tools to calculate risk priority numbers dynamically based on live process data. Task Example: AI clusters variation sources and suggests priority improvement areas.



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KNOWLEDGE AREAS

Domain 5: IMPROVE PHASE	
Task 1	Brainstorming and Solution Development Generating and prioritizing potential solutions.
Task 2	Lean Tools and Techniques Implementing tools like 5S, Kaizen, and Kanban.
Task 3	Design of Experiments (DOE) Conducting experiments to optimize process parameters.
Task 4	Cost-Benefit Analysis Evaluating the feasibility and impact of proposed solutions.
Task 5	Leverage Generative AI for brainstorming solutions by combining industry best practices with internal data. Use AI-based simulation tools to test improvement scenarios before implementation. For Example: Optimize process parameters via AI-driven Design of Experiments simulations



KNOWLEDGE AREAS

Domain 6: CONTROL PHASE	
Task 1	Control Plan Development Documenting steps to sustain improvements.
Task 2	Statistical Process Control (SPC) Using control charts to monitor process performance.
Task 3	Mistake Proofing (Poka-Yoke) Implementing error-proofing techniques.
Task 4	Sustainability Measures Ensuring long-term adoption of improvements.
Task 5	Project Closure and Handover Transitioning ownership to process owners and documenting lessons learned
Task 6	Deploy AI-enabled SPC systems that send real-time alerts when control limits are breached. Use computer vision for mistake-proofing in manufacturing processes. For Example: AI suggests corrective actions automatically when variation trends are detected.



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KNOWLEDGE AREAS

Domain 7: LEAN TOOLS AND CONCEPTS	
Task 1	Waste identification and elimination (e.g., TIMWOOD: Transportation, Inventory, Motion, Waiting, Overproduction, Over processing, Defects).
Task 2	Value Stream Mapping (VSM) for process flow analysis
Task 3	Continuous Flow and Pull Systems
Task 4	<p>Apply AI-assisted Value Stream Mapping tools that recommend waste elimination strategies.</p> <p>Use IoT + AI analytics to track real-time process flows and inventory levels.</p> <p>For Example: Automated TIMWOOD waste detection using AI on operational datasets.</p>



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KNOWLEDGE AREAS

Domain 8: LEADERSHIP AND TEAM MANAGEMENT	
Task 1	Effective communication and stakeholder engagement.
Task 2	Managing change and resistance in organizational settings.
Task 3	Coaching and mentoring Black Belts and project team members.
Task 4	Conflict resolution and team dynamic
Task 5	<p>AI-powered collaboration analytics to measure team performance and communication effectiveness.</p> <p>Predictive analytics for identifying potential resistance points in change management.</p> <p>For Example: AI chatbot coach for Black Belts to guide decision-making during projects.</p>



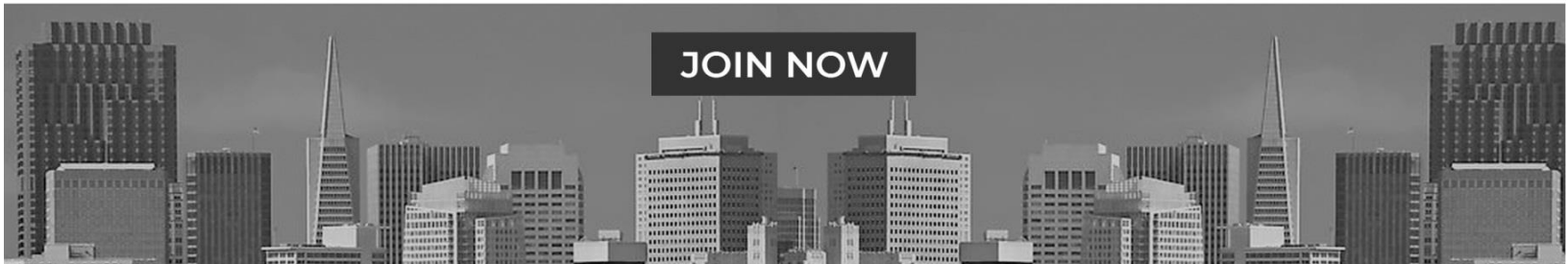
KNOWLEDGE AREAS

Domain 9: ADVANCED STATISTICS AND ANALYTICAL TOOLS	
Task 1	Advanced statistical modeling techniques (e.g., multivariate analysis)
Task 2	Non-parametric tests and reliability analysis.
Task 3	Data visualization and dashboard creation.
Task 4	<p>Use AI data visualization platforms for automated dashboard creation. (for e.g., Tableau with AI, Power BI Copilot)</p> <p>Implement AutoML tools for advanced statistical modeling without manual coding.</p> <p>For Example: AI recommends best-fit statistical models for given datasets</p>



KNOWLEDGE AREAS

Domain 10: CERTIFICATION PROJECT	
Task 1	Candidates must complete a real-world improvement project demonstrating the application of Lean Six Sigma methodologies.
Task 2	<p>Use AI project assistant to track milestones, suggest methods, and analyze interim results.</p> <p>AI-based ROI calculators for measuring the impact of implemented solutions.</p>



ASSESSMENT OF PROGRAM (ONLINE/PHYSICAL)

- The exam paper will be online/physical as per the choice of the candidate, but it is preferable to give the exam online.
- The exam paper will cover the above topics domain-wise.
- The Passing marks will be 70%.
- Internal Marks can be adjusted in the final marks through accredited trainers by obtaining prior permission from our Examination Department of IMRTC.
- Those candidates who cannot be able to give online tests due to online facility. So they are allowed paper-based examinations. Otherwise, the partner must arrange the center for the online exam as per the guidelines of the Examination Department
- Assessment will be done according to the domains and tasks mentioned above through our online methodology

EVALUATION AND GRADING

- The student will be examined through exams conducted by IMRTC LLC USA. Total marks for passing the CERTIFICATION/DIPLOMA will be 70 out of 100.

A grayscale image of a city skyline, featuring several tall buildings and skyscrapers, including the Transamerica Pyramid. The image serves as a background for the 'JOIN NOW' button.

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AI-CLSSBB ELIGIBILITY REQUIREMENTS

To be eligible for the Certified Lean Six Sigma Black Belt for any level, the candidates must have a 2 years Bachelor pass degree or equivalent by having Two-year market experience. The candidate should have to submit the credentials

Educational Background	Certification / Diploma
Bachelor degree Passed or Equivalent	Must be earned from any partner institute / trainer about 4.8 Credit hours course training
Professional Experience	Certification / Diploma
Two to three years Minimum Professional Experience Required	From any professional organization or company

REGISTRATION AND PAYMENT PROCESS

REGISTRATION PROCESS

Registration of the program is to be completed through our registered partners and if the partners are not available in your city or country then you can download this registration form and submit the fee in our bank account directly and wait for the email or contact from our Registration or Examination Department. For further information to our examination department contact at registration@imrtc.org.



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IMRTC EXAMINATION SYSTEM

AI CERTIFIED LEAN SIX SIGMA BLACK BELT CERTIFICATION

PARTNER INSTITUTE INTERNAL EXAMINATION SYSTEM

The concerned partner/institute/trainer will take examinations online and submit to the International Management Research and Technology Consortium Examination Department.

IMRTC ONLINE EXAM SYSTEM

IMRTC will provide access to all partners to schedule the exams of the particular courses of any individual candidates. Therefore, according to the availability, the partner institutes will schedule the exam of individual candidates' subjects or courses/certifications.



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FEES STRUCTURE

AI CERTIFIED LEAN SIX SIGMA BLACK BELT

S. No	Description	Fees
1.	Membership Fee	USD 50
2.	Examination Fee For Non Members	USD 399
3.	Examination Fee For Non Members	USD 299



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PROCESS OF CERTIFICATION

To get the certification, 48-Professional training hours as PTH is mandatory from any concerned professional trainer or Partner, and participants should have to submit their training PTH with the Examination Application Form with the attachments of required qualifications and other experience certificates/letters. The Paper is based on 100 Questions with MCQs and 70% passing marks is required to pass the exam. Further, if the Project is also included in your exam, marks will be distributed according to course & certification.

TERMS & CONDITIONS RELATED TO EXAMINATION AND CERTIFICATION

- The 48-Training-hours as PTH are valid up to one year.
- If the candidate is failed in the examination then S/he has one more chance to attempt the paper within a year, and if the candidate cannot not passed, then they have to pay the examination fee and re-appear in the examination.
- If the candidate has not passed the examination within one year and after sometime S/he would like to appear in the examination then candidate must to resubmit 48-Professional-Training-hours as PTH again required to appear in the examination.
- The examination system is online and candidate can book the exam anytime according to his or her availability.
- Those countries, who do not have the facility of online examination facility then they can give the paper based examination, which can be sent to authorized partner / trainers / examiner. The assessment time will be a month and we will be sent the results to concerned partner.
- The candidate will get the certificate within one month and administration will sent to the concerned partners.
- To maintain the worth and eligibility in the market, the candidate must have to renew their membership on yearly basis.

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EXAM CONTENT PERCENTAGE

The table below prescribes the proportions of examination questions from each section or Knowledge Areas defined above. The exam will be based on multiple choice questions, fill in the blanks and letter writing.

CONTENT	DOMAIN WISE PERCENTAGE
DOMAIN I	5%
DOMAIN II	5%
DOMAIN III	5%
DOMAIN IV	5%
DOMAIN V	7%
DOMAIN VI	6%
DOMAIN VII	7%
DOMAIN VIII	7%
DOMAIN IX	8%
DOMAIN X	45%



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