



Further guidance on the BSI Lean Six Sigma Certification Qualification

LEAN SIX SIGMA CERTIFICATION SPECIFICATION

raising standards worldwide™



Introduction



BSI Lean Six Sigma Certification is an opportunity to prove that the skills you have developed through your training, your examination and the successful completion of a project(s) are rewarded through a qualification that will be recognised globally.

BSI certification provides the confidence that existing and prospective employees have achieved a defined and tested level of expertise in the use of Six Sigma.

The following pages provide additional information to help you understand the commitment and preparation that will be required.

Requirements for BSI Lean Six Sigma Certification (Operational and Transactional)

GREEN BELT

ELEMENT	SPECIFIC REQUIREMENT	EVIDENCED THROUGH:	WHO WILL "MEASURE"
Training	Attend all formal days of training	Attendance Record	Your BSI Tutor
Examination	Attain 70% overall in the Green Belt exam with at least 50% attained for each phase of DMAIC	Exam result	BSI examiner
Project	Complete at least 1 successful project of the appropriate depth and breadth	DMAIC phased documentation – content and plan Status Reports/Project Workbook/Closure Report/Audited benefits/post-project implementation review by Sponsor, process owner, project team	BSI Master Black Belt with verification from the student's line manager or sponsor
Project tools and techniques	Demonstration of mandatory tools Appropriate use Effective execution Valid and appropriate next steps	Workbook or other report	BSI Master Black Belt

BLACK BELT

ELEMENT	SPECIFIC REQUIREMENT	EVIDENCED THROUGH:	WHO WILL "MEASURE"
Training	Attend all formal days of training	Attendance Record	Trainer
Examination	Attain 70% overall in the BB exam with at least 50% attained for each phase of DMAIC	Exam result	Master Black Belt
Initial Project	Complete at least 1 successful project of the appropriate depth and breadth	DMAIC phased documentation – content & plan Status Reports/Project Workbook/Closure Report/Feedback/ Review of project implementation by Sponsor, PO, project team/BB	Master Black Belt
Additional project requirements	Complete a 2nd project to the above criteria. (equivalent in size and complexity) which demonstrates additional capability in the tools/methodology	DMAIC phased documentation – content & plan Status Reports/Project Workbook/Closure Report/Feedback/ Review of project implementation by Sponsor, PO, project team/BB	Master Black Belt
Project tools and techniques	Demonstration of mandatory tools Appropriate use Effective execution	Workbook or other report	Master Black Belt

Requirements for Lean Six Sigma Certification (Operational and Transactional)

ADDITIONAL BLACK BELT REQUIREMENTS (which need to be demonstrated as part of project submissions)

ELEMENT	SPECIFIC REQUIREMENT	EVIDENCED THROUGH:	WHO WILL "MEASURE"
Coach/Train others	Lead training of Process owners or Lead awareness training and Manage a formal coaching relationship (covering basic Lean 6 Sigma methodology & tools)	Course evaluation feedback from delegates and workbook of coachee Submitted as part of project documentation	Master Black Belt
Project management	Execute project in a planned and timely manner Manage risks and issues Demonstrate the mandatory tools	Project Plan and Status reports Status report Workbook	Master Black Belt
Change Management	Identify and manage all stakeholders through the change process Create the desire for change, gain sponsorship and organisational alignment behind the change	Workbook, phase reviews and implementation execution	Master Black Belt
Team work	Learns and shares across all team members with diplomacy Prepared to seek advice and shares outcomes Involves people appropriately Consistent level of activity despite circumstances Sincere Able to manage teams in difficult circumstances	Feedback Status reports and workbook	Master Black Belt
Communication	Promotes the project/the work of the team and individuals and its value energetically to the wider business	Feedback and Observation Status reports and workbook	Master Black Belt
Leadership	Inspires people by providing focus and meaning for the team	Feedback and Observation Status reports and workbook	Master Black Belt
Facilitation	Brings together a disparate group, provides focus and guides people towards a successful conclusion	Feedback and Observation Status reports and workbook	Master Black Belt
Influence	Uses a selection of information and tactics, and without formal authority, to guide someone willingly towards an outcome	Feedback and Observation Status reports and workbook	Master Black Belt

Lean Six Sigma Tools and Body of Knowledge

TOOLS FOR OPERATIONAL GREEN BELT AND BLACK BELTS

These are the subjects that will be taught on BSI Lean Six Sigma courses and from which the examination subjects will be chosen.

UNDERSTANDING DMAIC AND LEAN METHODOLOGIES

Sponsor and Process Owner engagement

PROBLEM SOLVING TOOLS

Affinity Diagram
Is/Is not Analysis
5 Whys
Ishikawa Diagram (Fishbone)
Kano
Stakeholder Analysis
Process Flow Chart

PROJECT CHARTER

Communications Plan
Critical Success Factors
Problem and Goal Statement
Quality Related Costs (COPQ)
SIPOCI
Team Selection/Formation

CUSTOMER FOCUS

Voice of the Customer (VOC)
VOC to CTQ Translation
Cost Benefit Analysis

QUALITY FUNCTION DEPLOYMENT

PROJECT PLANNING AND MANAGEMENT

Goal Directed Project Management

PRINCIPLES OF LEAN

7 Wastes
Value Stream Mapping
5 S's
Process Analysis
Cellular Operation
Kanban
Mistake Proofing
Kaizen
SMED

MEASUREMENT

Cycle Time Analysis
Data Collection Plan

IMPROVEMENT TOOLS

Assumption Busting
Negative Brainstorming
Pilot/Implementation Plan & execution
Change Management
Risk Analysis
Control Plan
FMEA
Fault Tree analysis

STATISTICAL TOOLS

Baselining
Calculating Process Capability for normal and non-normal data
Sample Size Determination
Measurement System Analysis and Data Quality
Pareto Analysis
Graphical Analysis Tools

- Histograms
- Scatter Diagrams
- Graphical Summary
- Time Series Plots
- Tests for Normality
- Box Plots

Confidence Intervals
Hypothesis Tests

- t – test
- 2 Sample t – tests
- Paired t – test
- Test for Equal Variance
- One Way ANOVA
- Two Way ANOVA
- 1 Proportion test
- 2 Proportion tests
- Chi Squared test

Correlation & Regression

- Simple Linear Regression
- Multi Linear Regression
- Curvilinear regression

Design of Experiments

- Full Factorial
- Fractional Factorial

Normality
Control Charts

ADDITIONAL TOOLS FOR OPERATIONAL BLACK BELT

Multi Vari charts
Binary Logistic Regression
Screening Experiments
Response Surface Methodology
Taguchi Designs
Robust Tolerancing
Robust Design
CUSUM
EVOP
Augmentation
TRIZ
Theory of Constraints
TPM
DFSS Awareness
Change Management
Facilitation and Mentoring skills

Lean Six Sigma Tools and Body of Knowledge

TOOLS FOR TRANSACTIONAL GREEN BELT AND BLACK BELTS

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Correlation & Regression

- Simple Linear Regression

Normality
Control Charts

ADDITIONAL TOOLS FOR TRANSACTIONAL BLACK BELT

TRIZ
Advanced Process Mapping
Binary Logistic Regression
TPM
QFD
DMADOV
Theory of Constraints
Change Management
Facilitation and Mentoring skills
Questioning Techniques

Further guidance on the BSI Lean Six Sigma Certification Process

GENERAL INFORMATION ON THE QUALIFICATION

HOW CAN I USE AND PROMOTE MY BSI LEAN SIX SIGMA QUALIFICATION?

Having achieved BSI Lean Six Sigma certification you will receive a Certificate of Achievement.

You will be able to use one of the following on business cards and personal correspondence:

- Certified BSI Lean Six Sigma Transactional Green Belt
- Certified BSI Lean Six Sigma Transactional Black Belt
- Certified BSI Lean Six Sigma Operational Green Belt
- Certified BSI Lean Six Sigma Operational Black Belt

From time to time BSI may wish to promote the scheme through case studies of students achievements and project success. This will only be done with the express permission of the student.

WHAT ARE THE FEES ASSOCIATED WITH CERTIFICATION?

Please see separate price list for details of all individual and group fees.

All fees must be received before a certificate will be issued.

HOW LONG DOES CERTIFICATION LAST FOR?

The certificate does not have an expiry date or require recertification. It is expected that successful delegates will continue to keep themselves updated through a continuing personal development programme. All changes to the programme and body of knowledge will be communicated to successful delegates so that they may consider further training and development.

WHEN WILL THE CERTIFICATE BE ISSUED?

Certificates of Achievement will be issued upon successful completion of all three stages and receipt by BSI of all fees associated with the programme.

WILL THERE BE ANY OTHER FORM OF AWARD

Successful students will receive a BSI framed certificate and a plaque or trophy which may vary from time to time and will identify the level of qualification. (See the scheme brochure)

CERTIFICATION MARK

The BSI Lean Six Sigma certification mark can be used on your personal stationery and CV. Conditions on the use of the mark will be provided with your certificate.

EXAM REQUIREMENTS

WHAT TYPE OF QUESTIONS WILL THERE BE?

There will be a mixture of multiple choice and detailed answer questions including interpretation of data.

HOW LONG WILL THE EXAM LAST?

The examination will last for 2 hours.

WILL I BE ALLOWED TO BRING REFERENCE MATERIAL?

This will be an open book examination.

WHERE WILL THE EXAM BE HELD?

At a BSI location or on your site using an independent nominated invigilator.

BSI location exam dates will be published on the BSI web site and are available from BSI Learning on **+44 (0)845 086 9000**

HOW CAN I APPLY FOR A CERTIFICATION EXAM?

Application for the certification process and examination entry is available from BSI:

E: training@bsigroup.com T: **0845 086 9000**

WHAT IS THE PAYMENT POLICY?

Payment against invoice within BSI's normal terms and conditions available on request.

WHAT ARE THE POLICIES REGARDING REFUNDS, RESCHEDULING, CANCELLATIONS AND ABSENCES?

If a cancellation is made with more than 25 day's notice a full refund will be made.

If a cancellation is made less than 25 working days before the event the full fee is due.

To reschedule please contact a training advisor on **+44 (0)845 086 9000** and they will discuss the options available to you. Changes are only accepted before 21 days prior to the start date.

Changes and cancellations may need to be confirmed in writing.

WILL I RECEIVE A CONFIRMATION THAT I'VE BEEN APPROVED TO TAKE MY EXAM PRIOR TO THE EXAM DATE?

Confirmation with full instructions and examination locations details will be issued on receipt of the application.

HOW LONG AFTER TAKING THE COURSE CAN I TAKE THE EXAM?

The examination may be taken as soon as required after your course but if an extensive delay occurs it is possible that the body of knowledge will have changed.

HOW LONG DOES IT TAKE TO GET MY EXAM RESULTS?

Exam results will be issued within 2 weeks of the examination date.

I DID NOT PASS. WHAT IS THE RETAKE POLICY?

BSI will allow the student to retake an examination a maximum of 3 times.

PROJECT REQUIREMENTS

HOW DO I SUBMIT A PROJECT?

Stage 1 – Submit your project outline following discussion with a BSI Master Black Belt. This often happens during training.

Stage 2 – Present a completed project for assessment by BSI Master Black Belt.

Stage 3 – Projects are assessed by the BSI Master Black Belt obtaining confirmation by the students line manager or sponsor that the project delivered the outcome presented. If there are any perceived gaps in requirements the BSI Master Black Belt will advise the student at this stage and a resubmission will be possible.

Stage 4 – A formal presentation of the project will be required by the student to a BSI Master Black Belt at a location and time to be agreed.

IS THERE A DEADLINE?

Projects should be submitted within 6 months of successfully completing the examination.

WHAT CONSTITUTES A PROJECT FOR CERTIFICATION?

A Black Belt project should have several of the following characteristics:

- Significant stakeholders
- Cross functional/departmental/location in scope
- Multi-process
- Multiple Y's
- Large breadth of tool usage
- Significant shaping to bring clarity and focus

In contrast a Green Belt project will be characterised by several of the following features:

- Focused at a single process
- Straightforward data collection and analysis
- Single Y
- Local owner
- Impacts a single team
- Low level of benefits

HOW DO THE CERTIFICATIONS BUILD?

The certifications build in the following order

1. Lean Six Sigma Green Belt
2. Lean Six Sigma Black Belt

If an individual is already certified as a Green Belt then, to be certified as a Black Belt they will only be required to complete one additional project of Black Belt scope and complexity (as defined above). This project must however demonstrate any mandatory tool usage not yet completed. All other certification criteria would still be required and evidence from leadership of Green Belt projects would be acceptable.

It should be noted that in order to meet all the certification criteria more than the minimum number of projects may be required i.e. the range of certification criteria could be demonstrated across multiple projects or discrete pieces of work.

Also a single project may contribute to more than one level of certification e.g. the first project may be sufficient for Green Belt certification and also be of enough size and scope to be one of the 2 projects required for Black Belt certification.

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