

# LEAN SIX SIGMA BLACK BELT PROFESSIONAL CERTIFICATION



LSSBBPC™ Version 022023





# Lean Six Sigma Black Belt Professional Certification LSSBBPC™

## Syllabus V022023

Introduction	3
Objetives	3
Examination format and duration	3
Target Audience	3
Prerequisites	3
Content	4



#### Introduction

The Lean Six Sigma Black Belt certification allows professionals to have knowledge of continuous improvement project management, with extensive statistical fundamentals that allow the application of the DMAIC cycle in an agile and concrete way. The Lean Six Sigma Black Belt professional will be in the position to manage and lead multiple projects and professionals in continuous improvement for the reduction of waste and defects.

#### **Objectives**

- Learn about continuous improvement project management
- Create an agile and concrete workflow for quality improvement
- Have statistical knowledge that allows the analysis of data behavior.
- Have practice in the creation and management of a continuous improvement project.
- Be able to lead projects and professions in continuous improvement.

#### **Examination format and duration**

This syllabus has an exam in which the candidate must achieve a score to obtain the Lean Six Sigma Black Belt Professional Certification LSSBBPC™.

- Format: Multiple choice.
- Questions: 40.
- Language: English
- Passing score: 80%.
- Duration: 60 minutes
- Open book: No.
- Delivery: This exam is available online.
- Supervised: At the partner's discretion.
- Lean Six Sigma Project: At the partner's discretion.

## **Target Audience**

- Quality Managers
- Continuous improvement managers
- Quality managers and engineers
- Any professional who wishes to improve the processes and quality of the production of a good or service.

## **Prerequisites**

Certification in Lean Six Sigma Green Belt is recommended, but not required.



## Content

MODULE 1	9
Lean	10
LEAN Methodology	10
Kaizen	14
Just in Time	15
Cycle Time	15
Process Improvement	16
Variation	17
Waste	18
The 8 Wastes of Lean	19
Six Sigma	23
Yellow Belt (LSSYB)	24
Green Belt (LSSGB)	24
Black Belt (LSSBB)	25
Master Black Belt (LSSMBB)	25
Phases of an LSS Improvement Project	26
DMAIC Technique	26
DMADV Framework	27
Define	27
Measure	28
Analyze	28
Design	29
Check	29
MODULE 2	30
Project Management	31
Level of Complexity Projects	31
Types of Projects	32
Project Management Cycle	33
Integration Management	34
Scope Management	34
Time Management	35
Cost Management	35
Quality Management	36
Human Resources Management	36
Communication Management	37
Risk Management	37
Procurement Management	38
MODULE 3	40
Agility Scrum Framework	40 40
JUILII FIAIIICWUK	40



Roles in the Scrum Framework	41
Scrum Events	42
Scrum Artifacts	47
Commitment	47
Benchmarking	50
Internal Benchmarking	50
External Benchmarking	51
Dispute Resolution	52
Change Management	54
MODULE 4	55
VoC - Voice of Customer	56
CTC - Critical to Quality	57
Decision Matrix	58
SIPOC Diagram	59
Tree Diagram	60
MODULE 5	61
Distribution	62
Common Probability Distributions	62
Measurement System Analysis (MSA)	63
The House of Quality	65 66
Process Capability Analysis (Cp & Cpk)	
MODULE 6	<b>68</b> 69
Value Stream Map	70
Examples Hypothesis Test	70 71
Analysis of Variance (ANOVA)	71
Failure Mode and Effect Analysis (FMEA)	73
Fishbone Diagram (Ishikawa)	75
Correlation	76
Regression	77
Confidence Intervals	77
Box Plot	78
Scatter Diagram	78
MODULE 7	79
Design of Experiments (DOE)	80
Types of Experiments	80
Taguchi Method	81
Prioritization Matrix	82
MODULE 8	83
Control Plan	84
Control Charts	85
References	87