



**B U S I N E S S
EXCELLENCE**
C O N S U L T I N G **Inc.**

Passion for Quality

TRAINING TITLE:

ASQ Certified Six Sigma Black Belt
Academia (ACAD-004)

OVERVIEW:

The Certified Six Sigma Black Belt is a professional who can explain Six Sigma philosophies and principles, including supporting systems and tools. A Black Belt should demonstrate team leadership, understand team dynamics and assign team member roles and responsibilities. Black Belts have a thorough understanding of all aspects of the DMAIC model in accordance with Six Sigma principles. They have basic knowledge of Lean enterprise concepts, are able to identify non-value-added elements and activities and are able to use specific tools.

TARGET GROUP FOR THE TRAINING:

This training is aimed at all persons interested in preparing for the ASQ Certified Six Sigma Black Belt exam provided twice per year. Attendees will obtain a better understanding of some of the Lean Six Sigma principles required to become a Six Sigma Black Belt.

LEARNING OBJECTIVES:

- Identify the most widely used Lean Six Sigma tools and techniques
- Apply the appropriate tools for each situation faced on a daily basis by a Six Sigma Black Belt
- Prepare for the ASQ Certified Six Sigma Black Belt exam

MATERIALS:

Each participant will receive:

- *CSSBB Primer and Solution Text*, published by Quality Council of Indiana
- *The Certified Six Sigma Black Belt Handbook*, published by ASQ Quality Press
- Certificate of Attendance

TRAINING DURATION:

35 contact hours



BEC is authorized by IACET to offer 3.5 CEUs for this program. FULL attendance to the learning event is mandatory to receive CEUs.

COURSE INSTRUCTOR:

Hector Ortiz Beltrán is Senior Business Excellence Manager for Johnson & Johnson and has been responsible for supporting the institutionalization of Process Excellence for J&J-PR affiliates, reinforcing the leadership competencies and change management mindset needed for an effective deployment of continuous improvements techniques. He has over 20 years of experience at Johnson & Johnson, in positions of increasing responsibility on the consumer (J&J Hemisferica) and medical devices (Ethicon) sectors as well as J&J Business Services organization. He also provides internal and external consulting services to J&J Master Black Belt Leadership Groups. He received his Master's Degree (MBA) in Materials Management from Turabo University, in Gurabo PR. He is also a licensed Professional Engineer registered in Puerto Rico. Hector is a Master Black Belt for Johnson & Johnson and ASQ Certified Quality Engineer.

Gloryvee Maldonado Pérez is a training consultant within the FDA-regulated industries with more than 10 years of pharmaceutical and medical devices industry experience, in the areas of quality assurance, quality control, regulatory, validation, manufacturing, and packaging. She has a Bachelor Degree in Chemistry from the University of Puerto Rico at Rio Piedras Campus. She also has a Master of Science in Manufacturing Competitiveness, with a specialization in pharmaceutical products, from the Polytechnic University of Puerto Rico in Hato Rey, P.R. Since year 2012, she is fully devoted to consulting under Business Excellence Consulting Inc, focusing on training on related Quality sectors. She is an ASQ Certified Six Sigma Black Belt, and Certified Quality Engineer. She is also a CAPA System Expert Investigator and ISO 13485 Lead Auditor.

Manuel E. Peña-Rodríguez is a process improvement and training consultant within the textiles, electronics, and FDA-regulated industries with more than 20 years of experience in those fields. Since January 2006, he is fully devoted to consulting under Business Excellence Consulting Inc, focusing on training and implementation of Lean Six Sigma initiatives and CAPA / Root Cause Analysis workshops. He also serves as professor in the graduate program in biochemistry at the University of Puerto Rico, Medical Sciences Campus, in San Juan. Manuel received his J.D. degree from the Pontifical Catholic University of Puerto Rico and his master's of engineering in Engineering Management from Cornell University in Ithaca NY. He is also a licensed Professional Engineer registered in Puerto Rico. Manuel is an ASQ Certified Six Sigma Black Belt, Manager of Quality & Organizational Excellence, Quality Engineer, Quality Auditor, Biomedical Auditor, and HACCP Auditor. He is also a Senior member of ASQ and former Chair of the Puerto Rico ASQ Section. He is the author of the book "*Statistical Process Control for the FDA-Regulated Industry*", published by ASQ Quality Press in April 2013 and co-author (with José Rodríguez-Pérez) of the article "*Fail-Safe FMEA*" published in the January 2012 edition of the ASQ Quality Progress magazine.



Title: ASQ Certified Six Sigma Black Belt (Day 1)

Lunch from 12:00 – 13:00.

Coffee break: 15 min. each during morning and afternoon session. Time schedule are rough estimates and may vary consequently.

Agenda

8:30 – 9:00	Certification Overview
9:00 – 10:15	Enterprise-Wide Deployment <ul style="list-style-type: none"> • Value of Six Sigma • Six Sigma foundations • Value and foundations of Lean • Integration of Lean and Six Sigma • Business processes and systems
10:15 – 10:30	Break
10:30 – 12:00	Enterprise-Wide Deployment (cont.) <ul style="list-style-type: none"> • Leadership responsibilities • Organizational roadblocks • Change management • Linking projects to goals • Roles and responsibilities • Practice exercises
12:00 – 13:00	Lunch
13:00 – 15:00	Process Management <ul style="list-style-type: none"> • Overview • Stakeholder impact • Critical requirements
15:00 – 15:15	Break
15:15 – 17:00	Process Management (cont.) <ul style="list-style-type: none"> • Benchmarking • Performance measures • Financial measures • Practice exercises



Title: ASQ Certified Six Sigma Black Belt (Day 2)

Lunch from 12:00 – 13:00.

Coffee break: 15 min. each during morning and afternoon session. Time schedule are rough estimates and may vary consequently.

Agenda

8:30 – 10:15	Team Management <ul style="list-style-type: none"> • Team formation • Team facilitation • Team dynamics • Time management
10:15 – 10:30	Break
10:30 – 12:00	Team Management (cont.) <ul style="list-style-type: none"> • Decision making tools • Problem solving methodologies • Management and planning tools • Evaluation and reward • Practice exercises
12:00 – 13:00	Lunch
13:00 – 15:00	Define <ul style="list-style-type: none"> • Customer identification • Customer feedback • Customer requirements • Project charter content • Charter negotiations • Charter measures
15:00 – 15:15	Break
15:15 – 17:00	Define (cont.) <ul style="list-style-type: none"> • Project tracking • Work breakdown structure • Planning tools • Project documentation • Practice exercises



Title: ASQ Certified Six Sigma Black Belt (Day 3)

Lunch from 12:00 – 13:00.

Coffee break: 15 min. each during morning and afternoon session. Time schedule are rough estimates and may vary consequently.

Agenda

8:30 – 10:15	Measure - Data <ul style="list-style-type: none"> • Process characteristics • Inputs and output variables • Flow metrics • Data collection • Types of data • Sampling methods
10:15 – 10:30	Break
10:30 – 12:00	Measure - Data (cont.) <ul style="list-style-type: none"> • Measurement systems • Systems analysis • Metrology • Practice exercises
12:00 – 13:00	Lunch
13:00 – 15:00	Measure - Statistics <ul style="list-style-type: none"> • Central limit theorem • Descriptive statistics • Graphical methods • Statistical conclusions
15:00 – 15:15	Break
15:15 – 17:00	Measure -Statistics (cont.) <ul style="list-style-type: none"> • Common probability distributions • Process capability analysis • Process capability indices • Non-normal data • Performance metrics • Practice exercises



Title: ASQ Certified Six Sigma Black Belt (Day 4)

Lunch from 12:00 – 13:00.

Coffee break: 15 min. each during morning and afternoon session. Time schedule are rough estimates and may vary consequently.

Agenda

8:30 – 10:15	Analyze <ul style="list-style-type: none"> • Regression • Multivariate tools • Multi-vari analysis
10:15 – 10:30	Break
10:30 – 12:00	Analyze (cont.) <ul style="list-style-type: none"> • Hypothesis tests • Point and interval estimates • Non-parametric tests • Risk management and FMEA • Waste analysis • Practice exercises
12:00 – 13:00	Lunch
13:00 – 15:00	Improve <ul style="list-style-type: none"> • Design of Experiments terminology • Design principles • OFAT experiments • Fractional factorial experiments • Full factorial experiments
15:00 – 15:15	Break
15:15 – 17:00	Improve (cont.) <ul style="list-style-type: none"> • Waste elimination • Cycle time reduction • Kaizen • Theory of constraints • Implementation plans • Practice exercises



Title: ASQ Certified Six Sigma Black Belt (Day 5)

Lunch from 12:00 – 13:00.

Coffee break: 15 min. each during morning and afternoon session. Time schedule are rough estimates and may vary consequently.

Agenda

8:30 – 10:15	<p>Control</p> <ul style="list-style-type: none"> • Statistical process control • Rational subgrouping • Control chart selection • Control chart analysis
10:15 – 10:30	<p>Break</p>
10:30 – 12:00	<p>Control (cont.)</p> <ul style="list-style-type: none"> • Total productive maintenance • Visual factory • Control plans • Sustain improvements • Training plans • Documentation • Practice exercises
12:00 – 13:00	<p>Lunch</p>
13:00 – 15:00	<p>Design for Six Sigma</p> <ul style="list-style-type: none"> • DFSS methodologies • Design for X • Robust design • Special design tools
15:00 – 15:15	<p>Break</p>
15:15 – 17:00	<p>Design for Six Sigma (cont.)</p> <ul style="list-style-type: none"> • Training summary • Practice exercises