

## Master Black Belt in Lean Six Sigma - Online Course

### Certification

On successful completion of this program, Participants will be certified as Lean Six Sigma Master Black Belts. Certification is awarded by Florida Atlantic University, USA, by completing the online course, including all exercises and assignments during the course.

The Certificate will be sent by post to the successful Participant, it includes the Participants name and course title. Successful Participants also earn 35 PDU's.

### Overview

The online Master Black Belt program is available to Participants for a 6 month period, during this time you have full access to the course content. You can study at your own pace and on your own schedule as long as you fulfill the workload that is assigned weekly. Your instructor is available for guidance, discussions and to give you feedback on your course work throughout the duration of the course. The course is delivered using The Blackboard Academic Suite. Blackboard software has become the most popular and proven online learning solution in the world.

### Role of a Lean Six Sigma Master Black Belt

- Training, mentoring and coaching people in the organisation who are involved in Lean Six Sigma.
- Raising the level of organisational competency with respect to Lean Six Sigma.
- Being the highest level of technical expertise on Lean Six Sigma in the organisation.
- Developing and conducting training sessions.
- Transferring lessons learned.
- Assisting upper management to drive change.
- Leading large and complex projects.
- Fostering an organisational culture of continuous improvement.

### Curriculum

The Curriculum is aligned with the recommendations of both the American Society for Quality (ASQ) and the International Society of Six Sigma Professionals (ISSSP), and seamlessly integrates Lean Six Sigma, Project Management, and Lean Enterprise improvement methodologies. The course focuses on service and information systems/information technology, business processes as well as manufacturing processes, and examples from both types of businesses are included.

The Project Management portions of the course are aligned with *A Guide to the Project Management Body of Knowledge* as published by the Project Management Institute. The course will stress the connection between project management and Lean Six Sigma, and how project managers can and will be more successful when using the Lean Six Sigma approach and Lean Six Sigma tools and techniques. The lesson titles are:

#### Design for Six Sigma (DFSS)

- When to use DFSS/DMADV

- Quality Function Deployment
- Design for “X”
- Taguchi Loss Function
- Robust Design
- Tolerance Analysis
- DFSS for Processes and Services

#### Leading Organisational Change and Fostering Continuous Improvement

- Effectively Defining Project Goals
- Integrating Six Sigma Into Business Strategy
- How to Quantify the Impact of Six Sigma Projects
- Empowering Employees
- Leading a Kaizen Event
- Reducing Resistance and Winning Support
- Selling Your Ideas

#### Training, Mentoring and Coaching

- Developing a Deeper Understanding of the DMAIC Process
- Best and Worst Training Practices
- Adult Learning Theory
- Accelerated Learning Techniques

#### Advanced Statistical Tools and Techniques

- Characteristics and Uses of Advanced Probability Distributions
  - Lognormal
  - Weibull
  - Uniform
  - Negative binomial
  - Integer
  - Beta
  - Cauchy
  - Gamma
  - Laplace
  - Largest extreme value
  - Logistic
  - Loglogistic
  - Smallest extreme value
  - Triangular
- Introduction to Response Surface Methodology
- Non-normal Data Transformations
- Advanced DOE
- MINITAB 15 Applications

#### Advanced SPC Control Charts

- Short Run Control Charts
- CUSUM Control Charts
- Zone Control Charts
- Exponential Weighted Moving Average (EWMA) Control Charts
- I-MR-R/S Control Charts

#### Advanced Lean Topics

- Policy Deployment (Hoshin Kanri)
- Leaders Who Teach Others

- Reflection (Hansei)
- Mutual Ownership of Problems
- Takt Time and Requirements for Flow
- Facility and Workplace Layout Principles
- Level Scheduling (Heijunka)
- Improving the Supply Chain

### **Who should attend?**

- The Lean Six Sigma Master Black Belt program is intended for outstanding individuals who have the aptitude and desire to master the complexities of the training program and fulfill the role of the Master Black Belt
- Candidates who will lead organisation wide Lean Six Sigma improvement projects
- Professionals leading efficiency improvement and cost reduction projects
- Candidates wishing to improve their skill sets in a highly relevant subject

### **Prerequisites**

Candidates for the Lean Six Sigma Master Black Belt certificate must be previously certified as a Black Belt, or must have completed the Lean Six Sigma Black Belt training program offered by Project Solutions prior to enrolling on this course. Candidates should have strong mathematical skills and are required to utilise statistical analysis software.

Candidates must be certified as a Black Belt for at least six months and must have completed at least two projects as a Black Belt prior to enrolling in the Master Black Belt program.

### **Textbook**

- *Implementing Six Sigma – Second Edition* by Forrest W. Breyfogle III.
- Participant Workbook – Six Sigma Master Black Belt Certification.  
Students need to have access to the following while going through the online course:
- Green Belt and Black Belt participant workbooks
- *The Six Sigma Way Team Fieldbook* by Pande, Neuman and Cavanaugh (Green Belt text)
- Data on real-life problems and performance measures

### **Computer Requirements**

A computer with Microsoft Excel is required, along with the necessary password/authority to load software. Computer must meet the following system requirements for MINITAB software: · Operating System – Microsoft Windows 2000 or XP

- Hard Disk Space – 125MB free space available
- Processor – Pentium II or equivalent
- RAM – 256 MB or more
- Screen resolution – 1024 x 768 or higher
- Adobe Acrobat Reader – Version 5.0 or higher

### **Software Requirements**

Participants are required to purchase Minitab 15 and Minitab Quality Companion 2. You will be provided with a Florida Atlantic University ID that will allow you to purchase the software at an academic discount from e-academy.com. Detailed instructions on how to make these purchases will be provided upon enrollment. The cost of each of these two pieces of software will vary between \$29 and \$99 depending on the duration option that you select (three months to perpetual).