Six Sigma Black Belt Conversion Duration: 10 days (2 x 5 days) Price: £3,250 + vat	At the heart of Six Sigma improvement and redesign activities are project teams. These teams will require technical knowledge of the Six Sigma Tools to be successful. Six Sigma Black Belt training is focused on team members who will become a technical expert in applying the statistics required within the **D**efine **M**easure **A**nalyse **I**mprove and **C**ontrol (**DMAIC**) model which is the foundation of most Six Sigma projects. In most organisations there is recognition that employees who are trained Green Belts are capable of moving up to Black Belt level. It is important that this opportunity be available without having to complete the full Black Belt course. This programme has been designed to incorporate those elements from the Black Belt course that are additional to the Green Belt course. Black Belts are individuals that apply intensive and diversified process improvement techniques to achieve greater efficiency and effectiveness. A Black Belt provides training, facilitation, direction, analysis and advises on product and process improvement.

*The pre-requisite for this course is completion of our **Lean Six Sigma Greenbelt** course and completion of at least one project.*

Course Objectives:

At the end of the intensive ten day programme delegates will understand and be able to:

- Apply the principles of the Six Sigma DMAIC performance improvement model.
- Establish the “Voice of the Customer” in defining the required performance standard.
- Identify the “cost per poor quality” COPQ
- Use a number of measurement approaches and tools to establish current performance.
- Appropriately apply a number of advanced statistical analysis tools and techniques to establish the root cause of a problem.
- Recognise the difference in approach and techniques for incremental and redesign improvement strategies and know how to decide on the correct approach.
- Establish ongoing process controls and process governance structures.
- Complete a full Six Sigma project- trough the DMA and some I phases
- Use Minitab to provide data analysis and process capability

Characteristics of a Black Belt:

- **Project Manger- Programme Manager**
- **Self Starter**
- **Excellent Communicator**
- **Influential**
- **Open Minded / Creative**
- **Organised**
- **Team Player**
- **Desire to Achieve Excellence**

Continued…

Course Content:

Delegates should bring a well defined project with them to the course, including SIPOC, Process Map and Data. You will be able to undertake live project work during the course and in the month's gap between the two weeks of training.

Define- Week 1

- Understanding Variability
- Project Charter
- Thought Mapping
- Basic Statistics
- QFD/VOC
- COPQ
- Process Maps

Measure – Week 1

- Measurement Basics
- Histograms
- Equipment R & R/MSA
- Scatter Plots
- Sigma Levels & DPMO
- Process Capability
- Yield Calculation
- Sampling Techniques
- Confidence Intervals
- Gauge R&R
- Implementing the measurement
- Data Collection
- Brainstorming
- FMEA

Analyse- Week 1- Week 2

- Data Analysis
  - Pareto charts
  - Frequency charts
  - Run charts
  - Variation
- Process Mapping and Analysis
  - Value Stream Analysis
  - Complexity
- Cause-Effect Diagram & 5 Why's
- Central Limit Theorem
- Confidence Intervals
- Capability Studies
- Correlation
- Regression
- Design of Experiments (DoE)
  - Full Factorial
  - 2k Fractional
  - Fractional
- Multi-Vari
- Correlation/Regression
- ANOVA
- Stratification
- Box Plots

Improve- Week 2

- Hypothesis Testing
  - T-Tests
  - F-Tests
  - ANOVA
  - Chi Square
- Selecting solutions
- Developing solution options
- FMEA risk analysis
- DoE in Optimisation
- Simulation
- Remedy Selection Matrix

Control- Week 2

- Mistake Proofing
- Statistical Control
  - Variation
  - Control Charts
  - I, X Bar and R Charts
- Response Charts
- Process Scorecards

Who Should Attend?
Managers, internal consultants, change agents, project managers, team leaders and team members who will be involved in Lean Six Sigma projects.

Prerequisites:

- Completion of our ***Lean Six Sigma Greenbelt*** course or equivalent training
- Completion of at least one Six Sigma project – please see Q & A below

Questions & Answers

Q What sort of project work should I have undertaken before the Black Belt Conversion course?

A At least one Green Belt project to control phase, using all the DMAIC tools

Q What do I need to prepare or bring with me to the training?

A A well defined project to work through (SIPOC, Process Map and Data)
Delegates are also welcome to bring their own laptop with Excel or Minitab to use during the course, although PCs will also be available at the training centre.

Q What do I need to complete to obtain Black Belt Certification?

A This training course will provide delegates with the skills, knowledge and tools they require to complete Six Sigma projects at Black Belt level in the workplace. Silicon Beach Training will provide a certificate on completion of the course.

If required delegates can also obtain independent Black Belt Certification from the British Quality Foundation

The BQF require the following for Black Belt Certification;

1. A complete implemented Six Sigma project (utilising all the fundamental tools) submitted as a PowerPoint presentation with all the data files to support data analysis.

2. A Project and Individual review with the BQF board - The certification process uses a mixture of formal examination and project review to assess abilities against a number of key competencies, ensuring that both the theoretical and the practical application of the methodology is evaluated.

Q What work should delegates undertake between the two weeks of training?

A Active participation in one project with Define and Measure phases completed. They should also bring some data along to the training for week 2 to run through the exercises.