

# Lean Six Sigma Black Belt Upgrade: March 2021 Programme (Virtual Format)

## PRE-PROGRAMME PREPARATION

For qualified Green Belts, this programme provides the upgrade path to achieve Black Belt status, focusing on the advanced DMAIC tools that are required for more complex projects.

Prior to the start of the training, candidates are requested to revise any Green Belt elements that may not be 'current' in your skillset, and to assist with this we will provide a suite of e-learning modules for revision.

Please note that the modules featured in the Black Belt Upgrade programme do assume that a Green Belt level of knowledge is already acquired (although some elements such as statistics to include a refresher).

### Accreditation

The Smallpeice accreditation process requires completion of a project for formal assessment and passing a multi-choice exam. The exam can be taken online after training is completed (revision and practice questions are also provided).

## DEFINE PHASE

**MARCH 23 (08:30 to 16:30)**  
Masterclass Live Webinar  
**INTRODUCTION TO THE ROLE OF THE BLACK BELT & DEFINING BLACK BELT PROJECTS**

- Programme Introduction
- The Role of the Black Belt
- Guide to Selecting Black Belt Projects
- DMAIC versus DMADV projects
- Scoping complex cross-functional projects
- Map of the Upgrade Programme Elements to DMAIC

**MARCH 24 (09:30 to 16:30)**  
Masterclass Live Webinar  
**PROJECT MANAGEMENT**

- Essential building blocks of a project
- Project schedules & resource management
- Risk assessment, monitoring and control

**MARCH 30 (09:30 to 16:30)**  
Masterclass Live Webinar  
**SITUATIONAL LEADERSHIP**

- Transformational leadership
- Influencing change
- Understanding change, the emotional factors
- Concepts and models for change
- Understanding barriers to change
- Managing resistance
- Personal action planning - persuasion campaigning

## MEASURE PHASE

**APRIL 14 (08:30 to 16:30)**  
Masterclass Live Webinar  
**DATA COLLECTION PLANNING**

- The role of data collection planning throughout a DMAIC project
- Use of Is/Is Not to find gaps in knowledge
- Understanding variation
- Selecting what to measure
- Calculating sample size
- Sampling considerations
- Developing a robust data collection plan
- Guidelines for survey sampling

**BASIC STATISTICS**

- Revision – descriptive statistics
- Understanding confidence intervals
- Introduction to probability
- The Normal Distribution Revisited
- The Binomial & Poison Distribution

**APRIL 28 (09:30 to 16:30)**  
Masterclass Live Webinar  
**MSA FOR MANUFACTURING PROJECTS**

- Revision of MSA fundamentals
- Type I Studies
- Type II Studies
- Nested gauge R&Rs
- Assessing Linearity & Bias
- Assessing Stability
- Attribute agreement analysis
- MSA case study exercise

## ANALYSE PHASE

**MAY 5 (08:30 to 16:30)**  
Masterclass Live Webinar  
**ADVANCED STATISTICAL APPROACHES**

- Advanced statistical techniques
- SPC & capability for non normal data
- Adjusting control limits for skewed data
- X-Bar & R charts
- Capability Analysis for non normal data
- Probability distributions
- The central limit theorem

**JUNE 16 (08:30 to 16:30)**  
Masterclass Live Webinar  
**SCREENING & TAGUCHI METHODS**

- Introduction to fractional factorial
- Screening designs
- Overview of advanced techniques e.g. EVOP, RSM
- Taguchi loss function
- Taguchi designs that deliver robust solutions in the presence of noise

**JUNE 17 (08:30 to 16:30)**  
Masterclass Live Webinar  
**ADVANCED DOE TECHNIQUES**

- Mixed and multi-level designs
- Response surface designs that enable accurate predictions for systems with non-linear relationships
- Botched runs
- Randomisation and grey coding
- DOE with historical data

**JUNE 18 (08:30 to 16:30)**  
Masterclass Live Webinar  
**OPTIMISING THE PROCESS**

- Regression analysis
- Understanding correlation
- Introduction to simple linear regression
- Application in Lean Sigma projects
- Introduction to multiple regression

**DESIGN OF EXPERIMENTS**

- Basic system optimisation
- Screening techniques using DOE

## IMPROVE & CONTROL PHASE

**JUNE 22 (08:30 to 16:30)**  
Masterclass Live Webinar  
**COACHING IMPROVEMENT TEAMS**

- Review of topics & technique
- Group teach back on techniques in action via presentations & Q&A session
- The Black Belt role as a coach
- The key skills of coaching
- The coaching continuum expert to discovery
- Understanding & using the GROW coaching model effectively
- Introduction to group coaching through action learning sets

**JUNE 23 (08:30 to 12:30)**  
Masterclass Live Webinar  
**DESIGNING A LEAN FUTURE STATE**

- Future State Mapping
- Principles of Lean
- Understanding Pull Systems
- The principles of Jidoka

**JUNE 28 (08:30 to 12:30)**  
Masterclass Live Webinar  
**FMEA & CONTROL PLANS**

- Levels of FMEA
- Identifying and addressing failure modes and their causes
- Facilitation of PFMEA
- Evaluating and managing risk

**JUNE 29 (09:30 to 16:45)**  
Masterclass Live Webinar  
**IMPLEMENTING & SUSTAINING THE IMPROVEMENT**

- Developing the future state map
- Developing & evaluating alternative solutions
- Solution selection – creativity techniques
- Verifying & implementing the solution

**Activity**

- Case Study on future state mapping
- Review of case study outputs

## HOW TO BOOK

- The overall duration of the programme is equivalent to 12 days, and the cost per participant is £2950 + VAT..
- This fee is fully inclusive of comprehensive reference materials, including suite of e-Learning revision modules. Additionally, the accreditation process (exam plus project assessment) is included in the fee.
- Please email [train@smallpeice.com](mailto:train@smallpeice.com) with your enquiry / requirements.

