



**Smallpeice Enterprises**  
a division of GP Strategies Limited



# Lean Six Sigma Manufacturing Black Belt Upgrade

Manufacturing Focused Content

Virtual Training Delivery

Open Enrolment Calendar

Fully Accredited

[train@smallpeice.com](mailto:train@smallpeice.com)

# Introduction

The Black Belt Upgrade programme is designed for candidates who have already studied and qualified as a Green Belt. The 'Manufacturing' upgrade path focuses on the advanced tools and techniques to develop expert Lean Six Sigma practitioners who are able to:

- Assess improvement opportunities and have the skills to select the right approach problem solving methodology.
- Lead and deliver large-scale cross-company projects delivering significant and quantifiable operational benefits.
- Encourage the cascade of Lean Six Sigma by supporting Green & Yellow Belts, and liaising with key sponsors and stakeholders to provide input to the company improvement strategy.

## Programmes include:

- ▶ Open enrolment calendar with choice of live virtual training or classroom-based events at regional venues.
- ▶ In-company programmes for group training at your company site.
- ▶ Interactive delivery style with case study team exercises to bring alive the technical content and showcase applications to transactional projects.
- ▶ Extensive course materials hub including user-friendly Lean Six Sigma toolkit; consolidation learning via supplementary e-learning modules; dozens of templates and proformas ready to use for your project.
- ▶ Industry recognised accreditation standards via Smallpeice or our external partnership with the British Quality Foundation.
- ▶ Optional add-on coaching packages to guide and fast-track you through your project.

## Minitab Software:

During the Black Belt programme, you will learn how to use Minitab – which is the industry standard software for Lean Six Sigma. Whereas Green Belt level projects can be handled via Excel, the deeper level of data and graphical analysis at Black Belt needs the bespoke functionality of Minitab. If you do not have Minitab licenses in your company already – this is something you will need to explore before enrolling by visiting [www.minitab.com](http://www.minitab.com).



**For bookings & enquiries**  
**email [train@smallpeice.com](mailto:train@smallpeice.com)**

Tel +44 (0)1926 336423 • [www.smallpeice.com](http://www.smallpeice.com)



# Virtual Programme

Live sessions via MS Teams

DEFINE PHASE	MEASURE PHASE	ANALYSE PHASE	IMPROVE & CONTROL PHASES		
<p><b>SESSION 1: 8.30am – 4.30pm</b>  <b>MANAGING &amp; DEFINING BLACK BELT PROJECTS</b></p> <ul style="list-style-type: none"> <li>DMAIC versus DMADV projects</li> <li>Scoping complex cross-functional projects</li> <li>Value stream mapping as a scoping tool</li> <li>Aligning the project to business strategy</li> <li>Managing project reviews (tollgates)</li> <li>Considering project risks</li> </ul>	<p><b>SESSION 2: 8.30am – 12.30pm</b>  <b>VALUE STREAM MAPPING</b></p> <ul style="list-style-type: none"> <li>Introduction to Value Stream Mapping</li> <li>Creating a Current State Map</li> <li>Using VSM as a Scoping Tool</li> <li>Identifying the Opportunities</li> </ul> <p><b>SESSION 3: 8.30am – 4.30pm</b>  <b>DATA COLLECTION PLANNING</b></p> <ul style="list-style-type: none"> <li>The role of data collection planning throughout a project</li> <li>Use of Is/Is Not to find gaps in knowledge</li> <li>Understanding variation</li> <li>Selecting what to measure</li> <li>Sampling considerations</li> <li>Developing a robust data collection plan</li> <li>Guidelines for survey sampling</li> </ul> <p><b>SESSION 4: 8.30am – 4.30pm</b>  <b>MSA FOR MANUFACTURING PROJECTS [MINITAB VERSION]</b></p> <ul style="list-style-type: none"> <li>Intro to MSA fundamentals</li> <li>Type I &amp; II studies</li> <li>Nested gauge R&amp;Rs</li> <li>Assessing linearity &amp; stability</li> <li>Attribute agreement analysis</li> </ul>	<p><b>SESSION 5: 8.30am – 4.30pm</b>  <b>PROCESS CAPABILITY &amp; PROCESS CONTROL</b></p> <ul style="list-style-type: none"> <li>Assessing process control</li> <li>Anatomy &amp; use of control charts</li> <li>Applications of SPC charts for variable and attribute data</li> <li>Understanding process capability</li> <li>Calculating process capability for continuous and attribute data</li> <li>Selecting appropriate capability metrics &amp; indices</li> </ul> <p><b>SESSION 6: 8.30am – 4.30pm</b>  <b>ADVANCED STATISTICAL APPROACHES</b></p> <ul style="list-style-type: none"> <li>Understanding probability distributions for variable and attribute data</li> <li>Dealing with non normal data</li> <li>Capability analysis for non normal data</li> <li>Statistical process control charts for non-normal data</li> <li>The central limit theorem</li> <li>Understanding and using data transformations</li> </ul>	<p><b>SESSION 7: 8.30am – 4.30pm</b>  <b>ANALYSE PHASE</b></p> <ul style="list-style-type: none"> <li>Verifying the root cause</li> <li>Taking a structured approach to data analysis</li> <li>Links to cause &amp; effect diagram</li> <li>5 Why approach</li> <li>Box plots &amp; scatter diagrams</li> <li>Significance testing approach</li> <li>Tips for summarising and presenting the analysis</li> </ul> <p><b>SESSION 8: 8.30am – 4.30pm</b>  <b>HYPOTHESIS TESTING</b></p> <ul style="list-style-type: none"> <li>Use of inferential statistics</li> <li>Writing a hypothesis statement</li> <li>Setting a confidence level</li> <li>Understanding the P-Value</li> <li>Tests for variable and attribute data</li> <li>Power &amp; sample size</li> <li>Non-parametric techniques</li> </ul> <p><b>SESSION 9: 8.30am – 12.30pm</b>  <b>INTRODUCTION TO DOE</b></p> <ul style="list-style-type: none"> <li>Overview of DOE techniques</li> <li>Optimisation challenge</li> <li>Applications of DOE</li> </ul>	<p><b>SESSION 10: 8.30am – 4.30pm</b>  <b>OPTIMISING THE PROCESS</b></p> <ul style="list-style-type: none"> <li>Regression analysis</li> <li>Understanding correlation</li> <li>Simple linear regression</li> <li>Multiple regression</li> </ul> <p><b>SESSION 11: 8.30am – 4.30pm</b>  <b>SCREENING &amp; TAGUCHI METHODS</b></p> <ul style="list-style-type: none"> <li>Intro to fractional factorial</li> <li>Screening designs</li> <li>Taguchi loss function</li> <li>Taguchi designs that deliver robust solutions in the presence of noise</li> </ul> <p><b>SESSION 12: 8.30am – 4.30pm</b>  <b>ADVANCED DOE</b></p> <ul style="list-style-type: none"> <li>Mixed and multi-level designs</li> <li>Response surface designs</li> <li>Botched runs</li> <li>Randomisation and grey coding</li> <li>DOE with historical data</li> </ul>	<p><b>SESSION 13: 8.30am – 4.30pm</b>  <b>SITUATIONAL LEADERSHIP</b></p> <ul style="list-style-type: none"> <li>Transformational leadership</li> <li>Influencing change</li> <li>Concepts for change</li> <li>Persuasion campaigning</li> </ul> <p><b>SESSION 14: 8.30am – 4.30pm</b>  <b>COACHING IMPROVEMENT TEAMS</b></p> <ul style="list-style-type: none"> <li>The key skills of coaching</li> <li>The coaching continuum expert to discovery</li> <li>Using the GROW model</li> </ul> <p><b>SESSION 15: 8.30am – 4.30pm</b>  <b>IMPLEMENTING CONTROL</b></p> <ul style="list-style-type: none"> <li>Confirming the improvement</li> <li>Developing a control plan</li> <li>Different types of process control</li> <li>Principle of mistake proofing</li> <li>Monitoring effectiveness</li> <li>Closing the improvement project</li> </ul>

## Calendar

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Session 7	Session 8	Session 9	Session 10	Session 11	Session 12	Session 13	Session 14	Session 15
<b>June 2024 course</b> ▶	Jun 13	Jun 21 (PM)	Jul 5	Jul 9	Jul 15	Jul 25	Jul 26	Aug 12	Aug 13	Aug 21	Aug 22	Aug 23	Aug 30	Sep 12	Sep 13
<b>September 2024 course</b> ▶	Sep 26	Sep 27	Oct 2	Oct 7	Oct 8	Oct 21	Nov 1	Nov 7	Nov 8	Nov 18	Nov 19	Nov 22	Nov 29	Dec 12	Dec 13

## Cost

The cost per participant for the Black Belt Upgrade virtual programme is £2850+VAT. This fee is fully inclusive of:

- ▶ 14 days of live training
- ▶ Access to materials hub
- ▶ The full accreditation process: exam plus project assessment and certification

# How to Book

## Training Fee

The cost per participant is £2850+VAT.

Fees are fully inclusive of:

- Live training via MS Teams
- Access to materials hub
- The full accreditation process: exam plus project assessment and certification

## Options

### Coaching Support

This can be provided via a series of 3 x 1-hour 1-to-1 sessions, delivered via MS Teams. These can be scheduled to suit the progress of your project. The cost of the coaching package is £495+VAT.

### Accreditation via British Quality Foundation (BQF)

The option for accreditation via the internationally recognised body of the British Quality Foundation is available for an additional fee of £250+VAT.

## Booking Process

Please email Smallpeice via [train@smallpeice.com](mailto:train@smallpeice.com) with your enquiry/ requirements.

Our experienced Lean Six Sigma booking team will then send you a booking form. Following enrolment, we will onboard participants to the programme platform which will provide a detailed menu of activities and preparation.

### Payment Terms

- An invoice will be issued following receipt of a confirmed booking.
- Payment is due 30 days from the invoice date.
- Payment can be made via credit card or bank transfer. Payment details can be found on the invoice.

### Cancellation Terms

If you should have to cancel a registration, the following options are available:

- Send a substitute delegate at no additional charge
- Incur a cancellation fee based on the following timescales:
  - If you cancel prior to 30 working days before the course you will be charged a cancellation fee of 20% of the course fee
  - If you cancel less than 30 working days, but prior to 10 working days before the course, you will be charged a cancellation fee of 50% of the course fee
- We regret that we cannot accept cancellations that are received less than 10 working days before the course start date.
- Please confirm your cancellation in writing.

Smallpeice Enterprises reserves the right to cancel courses if necessary. Delegates will be given advance notice of any such changes. Please do not send payment with this form – an invoice will be despatched.



**For bookings & enquiries**  
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