

## Six Sigma Green & Black Belt 10-Day Programme: 'Fast Track' Route

<b>GREEN BELT LEVEL (Days 1-5)</b>			
<b>CORE PRINCIPLES</b>	<b>DEFINE / MEASURE</b>	<b>MEASURE</b>	<b>MEASURE / ANALYSE</b>
<b>Day 1: Six Sigma Overview</b>	<b>Day 2: Defining the Current Situation</b>	<b>Day 3: Process Capability</b>	<b>Day 4: Measurement Systems Analysis</b>
<p>Origin &amp; background of six sigma Overview of DMAIC process People roles Six sigma results Six sigma projects: Selection and management</p> <p><b>Lean Thinking</b></p> <ul style="list-style-type: none"> <li>Waste elimination (7Ws)</li> <li>Workplace organisation (5S)</li> <li>Flow lines</li> <li>Takt time / cycle time/lead time</li> <li>Quick changeover (SMED)</li> </ul>	<p>Process mapping Xs &amp; Ys C &amp; E matrix</p> <p><b>Data collection</b></p> <ul style="list-style-type: none"> <li>Variables &amp; attributes</li> <li>Sampling and stratification</li> <li>Check sheets/tally chart</li> </ul> <p>Bar chart Pareto Run chart / trend chart Measles chart Histogram Basic statistics (mean, standard deviation)</p>	<p>Normal distribution Capability indices (Cp; Cpk; Pp; Ppk) Control vs capability Statistical definition of six sigma Predicting process fallout DPMO &amp; PPM Yield Z-score &amp; six sigma benchmark Cost of poor quality (COPQ)</p>	<p>Measurement errors Basic measurement studies</p> <p><b>Root Cause Analysis</b></p> <p>Is/Is Not Analysis Root cause analysis</p> <ul style="list-style-type: none"> <li>Brainstorming</li> <li>Fishbone chart</li> <li>Scatter chart</li> <li>5 whys</li> </ul> <p>Multi-vari studies</p>
<b>IMPROVE / CONTROL</b>		<b>BLACK BELT EXTENSION (Days 6-10)</b>	
<b>Day 5: Process Control (1)</b>		<b>Day 6: Hypothesis Testing</b>	<b>Day 7: Regression Analysis &amp; ANOVA</b>
<p>Average &amp; range control chart Decision rules Common &amp; special causes Individuals &amp; moving range chart</p> <p>Project review: Participants are invited to present to the group, an update of their project, e.g. progress to date, etc.</p>	<p><b>End of Green Belt training.</b></p>	<p>Testing for normality Central limit theorem Level of significance &amp; p-value Confidence intervals z-test t-test chi-square f-test Tests on a singular parameter Tests on two parameters Tests on proportions Paired comparisons</p>	<p>Correlation Sums of squares Linear regression models Prediction Multiple regression Introduction to analysis of variance (ANOVA)</p>
<b>BLACK BELT EXTENSION</b>			
<b>Day 8: Design of Experiments</b>	<b>Day 9: Process Planning</b>	<b>Day 10: Process Control (2)</b>	
<p>Design matrix Full factorial design Taguchi's robust design Orthogonal arrays Signal to noise ratio Fractional factorial design Designing and conducting an experiment Screening Experimental runs Analysis of results Selection of optimum Confirmation run</p>	<p>Failure Mode &amp; Effects Analysis Control Plan Error-proofing (poka-yoke) Control Plan</p> <p><b>Process Control (2)</b> <i>(continued on Day 10)</i></p>	<p>Attributes charts Control charts for special situations Advanced methods for evaluating capability</p> <p>Project review: Participants are invited to present to the group, an update of their project, e.g. progress to date, etc.</p>	<p><b>End of Black Belt training.</b></p> <p><b>Participants have the option of completing a black belt project within 8 weeks and achieving Black Belt certification.</b></p>