

**Toyota Advanced Problem Solving Tools
Six Sigma - Black Belt
Training Programme Outline**

Summary: A Black Belt level programme designed to deepen and broaden skills and confidence in Problem Solving and Process Improvement in a team-based environment. The curriculum builds on Capella's APST Green Belt programme and aims to support Black Belts in their roles of coaching Green Belts and leading more-complex projects. The coaching process is based on Toyota's OJD 4-steps. Assessment will be based on passing an open exam paper and presentation of a portfolio of evidence to demonstrate application of learning.

Aimed at: Section Managers and Principals

Prior qualifications/experience: Must have completed one TBP project, a Green Belt programme and one cycle of OJD development as a Coach

Duration: 12 days

Format: 1 phase each month for 6-8 months

Software Specification: The programme is built around Minitab and access to this is essential

Objectives: By the end of the programme, participants will be able to:

- Confidently coach others in the Six Sigma methodology
- Confidently apply appropriate tools and techniques to complex improvement projects
- Monitor own and others progress in the completion of improvement projects

Content:

Phase 1 – Launch, Overview, Box 1 and Project Management (2 days)

OJD overview

Roles

Project Reporting and Coaching Tools

Project selection and scoping critique plus “what makes a Black Belt Project?”

Problem statements critique

Operational Definitions critique

FMEA including boundary diagrams and p-diagrams

Kano Model

Is/Is Not critique

QFD

Project Charter critique

Project Management tools and communication planning

Reminder of Step 1 OJD and key questions for coaching

Leadership and Personal Development, Strategic Management, Lean Six Sigma & Quality Tools

<p>Phase 2 – Box 2 and 3 (3 days) Variable and Attribute data review Power and Sample size Normality Testing and data transformation Handling non-normal data Measurement Systems Analysis Review Type 1 & Type 2 study Probability Capability Analysis (variable and attribute data) critique Long term v short term data Cost of Poor Quality - Taguchi Loss function Reminder of Step 2 OJD and key questions for coaching</p>
<p>Phase 3 – Box 4 (2 days) Mid Programme Review Graphical Analysis tools including: Dot plots, 3D plots Multi Vari Charts Correlation and regression including curvilinear and quadratic relationships Confidence Intervals Hypothesis Testing ANOVA Reminder of Step 3 OJD and key questions for coaching</p>
<p>Phase 4 – Box 4 (2 days) Design of Experiments</p>
<p>Phase 5 – Box 5-8 (2 days) RSM Reliability Validation of Improvements review Long-term MSA Control Plans Control Charts and reaction plan review Post Audit Implementation Replication review Reminder of Step 4 OJD and key questions for coaching</p>
<p>Phase 6 – Project Reviews (1 day) Project reviews</p>