Data Driven Insights and Decisions 4 days

The ability to use data correctly and confidently to gain business insights, influence stakeholders and drive sound decision making is an essential skill in today's organisations. This programme provides a comprehensive set of tools to enable these requirements.

- Select and operationally define the right measures
- Validate and improve the measuring process so the data can be trusted
- Plan the data collection use the appropriate sampling approach
- Turn the data into information using statistics and graphs
- Use control charts to visualise and understand process behaviour
- Analyse data using graphical and statistical analysis - hypothesis testing and regression analysis

Who is this Module for?
- Individuals on the Business Black Belt Programme – this module provides the data/statistical tools component of the programme
- Individuals on the Lean Six Sigma Black Belt Programme – this module provides the first part (around 50%) of the data/statistical tools component of the programme
- Business Improvement /Transformation professionals who recognise the value of data but feel the traditional Lean Six Sigma Black Belt tool kit is more than they need at the minute
- Individuals who want to know how to understand more about their business processes from data - whether the data is taken from existing systems or has been collected specially for an analysis or improvement project

How can I take this Module?
- Through virtual classroom (2 + 2 days) or face to face classroom training (4 days). There is an self-study prework element which takes around 2 hours to complete beforehand. Classroom delegates have 24 month access to the self-study video materials.
- A series of self-study e-learning video modules to guide you through the content including plenty of opportunities to stop and practise the set examples and also apply the tools and techniques to your own data. The delegates will have 1-1 support from a Catalyst tutor. This is the equivalent of 4 days classroom training.

What software will you need?
This is a hands-on course and you will need a copy of Minitab software. You can purchase direct from Minitab or can obtain a free 30 day trial just before training starts. Alternatively, a 6-month licence is available through Catalyst. Many organisations already have Minitab licences. Data sets relevant to multiple environments are provided for the training

What are the Key Outcomes?
- You will be able to apply the correct techniques to measure, interpret and communicate process performance
- You will learn how statistical tools and the robust approach required to apply them enhances your thinking and promotes process learning

- Ability and confidence to influence key stakeholders and senior leaders with data
- Develop a working knowledge of key graphical and analytical techniques using Minitab® software

Follow-on Options

- Further Process Measurement and Analysis Techniques (2 days) follows directly from this programme – this would generally be taken by manufacturing/science/quality professionals in addition to Data Driven Insights and Decisions and by those on the Lean Six Sigma Black Belt Programme

Course Contents

- Introduction to Graphical Analysis (data visualisation)
  - Histograms, segmentation, Pareto, Scatter Diagram, Time Series Plots
  - Minitab skills
- Principles for identifying Y and X measures including Types of Data
- Operational Definitions
- Analysing the measurement system for discrete data – Attribute Agreement Analysis (full training on Gauge R&R is covered in the Further Process Measurement and Analysis Techniques module)
- Population and process sampling approaches
- Sample size calculations and considerations
- Process Control Charts for individual data points, sub-grouped data and attribute data
  - x/Mr
  - Xbar R/S
  - P/NP
  - C/U
  - Tests for special causes
  - Case studies
- Process Capability for normal and non-normal data
  - Cp and CpK indices
- Hypothesis Testing for continuous and attribute data whether 1, 2 or more groups within the data
  - T test
  - Anova
  - Proportions tests
  - Chi Square tests
  - Type 1 and 2 errors
- Regression Analysis with continuous data
  - Simple linear regression
  - Residuals analysis
  - Prediction model
- Working with Seasonal and Trending process data
- An introduction to process simulation