

UPSKILLING FOR INDUSTRY 4.0: WALES

Quality for Industry 4:0 - Level 5

Continuous Improvement with Industry 4.0 and Group Project Modules.

The world is evolving at an ever-increasing pace, Industry 4.0 is bringing new advancements, through a combination of smart cyber physical technologies, to the manufacturing sector. These new technologies give us further tools for our continuous improvement journeys.

Despite the benefits of these Industry 4.0 technologies, we need to consider the fundamentals of Lean Six Sigma methodologies which provide the ideal structure to support the continuous improvement of processes. This module, together with the Group Project, will support the development of Green Belt Six Sigma practitioners in your organisation to ensure that continuous improvement projects deliver their full potential economic value.

To do this, the Green Belt Six Sigma practitioners need to be able to identify potential project opportunities (using the most appropriate tools and techniques) and develop materials to engage with all stakeholders in the organisation on the benefits of the Six Sigma approach.

The programme, like all MADE Programmes, is delivered through a virtual classroom and supported with blended learning techniques to help learners understand the methodology and application of the DMAIC problem solving approach. This will take the student through the *Define, Measure, Analyse, Improve and Control* stages of a case study and ensure that the theory can be applied in a practical application, most importantly translating it into the learner's own environment and sector.

Using quality tools and techniques such as Pareto Analysis, Cause and Effect, Process Mapping, Gage R&R studies, capability studies, FMEA and data collection analysis. We ensure the all learners have the required tools and techniques to support the development of an organisational driven Project. This will deliver real economic value for the organisation through a quality improvement initiative and ensuring that the wider population benefits from this learning.

On completion of the two Quality (Six Sigma Green Belt) and Project modules, the learners will receive a University Certificate of 40 Credits at Level 5.

“The programme is delivered through a virtual classroom and supported with blended learning techniques.”



DMAIC Diagram

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Case Study
Gavin Price
Process Engineer

Downtime Reduction Project using Single Minute Exchange of Dies (SMED)

Single Minute Exchange of Dies (SMED) is a practice of reducing changeover time through the application of fundamental principles. Changeover is a non-value adding activity, for which the customer is not willing to pay.

The project followed the Define, Measure, Analyse, Improve, and Control (DMAIC) methodology. A structured thinking process allowing an organisation to take the longer-term view. It's rarely about quick, short-term, fixes.

Through DMAIC, using tools and techniques such as Quality Functional Deployment, Value Stream Mapping, Value Analysis, Design of Experiments, a number of non-value adding activities were identified, plans developed and actions implemented to increase productivity.

The DMAIC process can identify issues that might not have been exposed otherwise. The 'Control' phase ensures this issue should never arise again.

'The project identified a 44% reduction in downtime, contributing an additional 93 minutes per week to utilise as uptime'. The project also identified several further continuous improvement opportunities to deliver further value to the business.

Now that the organisation better understands Six Sigma, the cycle of DMAIC is reusable with further projects being planned, identifying more improvements which deliver authentic economic value for the business.

“The DMAIC process can identify issues that might not have been exposed otherwise.”

