



Lean Six Sigma Black Belt Programme

QQI (HET) Diploma in Process Engineering
Level 8 Special Purpose Award, 60 ECTS Credits

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Introduction to SQT⁷ and Our Approach

This Lean Six Sigma Black Belt Programme is designed for experienced improvement practitioners who are ready to lead complex, cross-functional projects and drive transformative change within their organisations. This advanced programme equips participants with the expertise to apply Lean and Six Sigma methodologies at a strategic level, combining data-driven problem-solving with practical leadership skills. Delivered by industry experts, the course provides a deep understanding of statistical tools, change management and advanced process improvement techniques, empowering learners to deliver sustainable results and mentor Green Belts and wider teams.

Delivered over six months through blended Tutor-led training, the core of the learning journey centres around the delivery of a substantial, real-world project that generates proven bottom-line results. On average, Black Belt projects completed through SQT have delivered savings in excess of €380,000 per project, demonstrating the real and measurable impact of the methodology.

Why Choose SQT

Hands-On, Practical Learning

- Engage in real-world projects that deliver measurable results.
- Apply Lean Six Sigma tools directly to workplace challenges.
- Learn through interactive exercises, case studies, and simulations.

Expert Mentoring & Support

- Assistance and guidance with project selection to ensure you choose the right project
- Ongoing one-to-one mentoring from experienced tutors to ensure project success.
- Access to a wide range of resources via our Moodle learning platform

Industry-Recognized Accreditation

- QQI Level 8 Diploma in Process Engineering.
- 60 ECTS credits for professional and academic recognition.



High ROI for Companies & Individuals

- Achieve significant cost savings and efficiency improvements.
- Equip teams with skills to sustain a culture of continuous improvement.
- Enhance career prospects with a globally recognized certification

Flexible Learning Options

- Onsite, virtual, and blended learning formats.
- Tailored training to fit your organization's needs.
- Access to digital resources and eLearning support.

Experienced Industry Practitioners

- Learn from tutors with real-world experience in deploying Lean Six Sigma.
- Gain insights from professionals who have led transformative projects.
- Our tutors will be with you throughout your journey, until your project is delivered.



Programme Overview



At a glance

- QQI Special Purpose Award at Level 8 (Diploma in Process Engineering – 60 ECTS Credits)
- 20 days tutor-led learning across 10 months
- Blended delivery: virtual, classroom and online access
- Highly interactive and practical project-based learning methodology
- Final certification contingent on completion of a major strategic improvement project & submission of assessment within 18 months from start of programme

Learners will select a significant improvement project that matters to the business. Across the programme advanced tools and leadership practices will be applied to deliver measurable outcomes. Classroom workshops are combined with project coaching so that learning is applied immediately.

Structure (typical):

- **Define (4 days)**: Business case development, stakeholder mapping, problem framing, CTQ flowdown, high level mapping, team leadership and project planning.
- **Measure (4 days)**: Graphical and statistical analysis, process mapping, brainstorming, control charts, non-normal data approaches and design for data collection.
- **Analyse (4 days)**: Multi-Vari Analysis, Root Cause Analysis, risk assessment, systems thinking and ANOVA, hypothesis testing.
- **Improve (4 days)**: DOE, correlation and regression, solution generation, piloting and verification, risk management, creative thinking and error proofing.
- **Control (4 days)**: Control plan design, visual management and benefit tracking. process monitoring, Kaizen, standardisation and simplification strategies.
- **Leadership throughout**: Change management, facilitation, coaching and influencing to drive adoption and sustain results.



What You Will Learn

This advanced programme is designed for leaders of larger, companywide initiatives. Black Belts will deepen their analytical toolkit (including DOE and advanced statistics) and build the change leadership skills needed to align stakeholders, coach teams and deliver strategic cross functional results.

By the end of the programme learners will be able to:

- Lead complex, cross-functional improvement programmes from definition to sustained control.
- Use data to diagnose performance, verify root causes and quantify benefits.
- Design and run practical experiments (DOE) to optimise processes and products.
- Apply advanced statistical methods to support decision making.
- Build engagement, manage change and coach Green and Yellow Belts.
- Document benefit realisation and institutionalise controls.

Who Should Participate?

This programme is ideal for professionals building the capability to deliver larger, cross functional projects and for those who aspire to Operational Excellence or Continuous Improvement leadership roles within their organisation.

- Experienced Green Belts and improvement leaders who will lead significant projects or programmes.
- Managers, engineers, scientists and analysts responsible for operational performance in manufacturing or services.
- Organisations seeking internal experts who can coach others and drive a culture of continuous improvement.

The methodologies taught in this programme are highly adaptable and apply across services and manufacturing and in both public and private sectors. Organisations of all types can apply Lean Six Sigma.

Programme Outline⁷

Define

Days 1-4

The Define phase focuses on establishing a strong foundation for project success. Participants will learn how to clearly define project objectives, align them with organisational goals, and secure stakeholder support. This stage ensures project teams and sponsors share a common understanding of the problem to be addressed



Measure

Days 5-8

The Measure phase enables participants to gain a factual and accurate picture of current process performance. Through robust data collection and measurement system validation, learners will identify process weaknesses and variability, laying the groundwork for uncovering improvement opportunities.

Analyse

Days 9-12

In the Analyse phase, learners will dive deeper into process data to determine root causes of poor performance. This module focuses on critical thinking and statistical analysis to identify true drivers of variation and target improvement efforts effectively.



Improve

Days 13-16

The Improve phase guides participants through the development and implementation of optimal solutions. Creative thinking, risk evaluation, and testing ensure that improvements are robust and practical.

Control

Days 17-20

The Control phase ensures improvements are maintained. Participants will create control mechanisms, document standards, and build accountability among process owners to embed improvements into daily operations



Throughout the programme, learners apply the tools and concepts from each module directly to their own strategic improvement project. This hands-on approach reinforces learning and ensures immediate relevance to their organisation. Between modules, participants benefit from direct access to their tutor for one-to-one mentoring support, providing expert guidance, feedback, and reassurance as they progress through each phase of their project.

Assessment and Certification

Successful achievement of Black Belt certification requires learners to demonstrate their ability to apply Lean Six Sigma tools and techniques in a real-world environment. This is achieved through the completion of a strategic improvement project that delivers measurable business benefits. The assessment approach ensures learners not only understand theoretical concepts but are also capable of applying them to drive tangible results in their organisations.



Assessment Components

Learners are assessed through a combination of project work, presentations, and examination, structured as follows:

- Project Proposal and Plan (10%)
- Continuous Project Assessment during the programme (10%)
- Comprehensive Written Project Report (30%)
- Project Presentation to a review panel (30%)
- Written Examination (20%)

Learners must successfully complete all assessment components. A minimum score of 40% is required in both the Written Project Report and Project Presentation, as well as in the overall assessment to achieve certification.

Learners have up to 18 months from the start of the programme to complete their projects and assessments.

Ongoing Project Review and Presentation

Throughout the programme, learners will have regular opportunities to present their project progress to their peers and Tutors. These interim presentations help develop presentation skills and reinforce the practical application of Lean Six Sigma tools and methodologies.

Following the final training element, learners present their completed projects to an assessment panel. Participants may also invite their Project Champion or senior management representatives to observe, offering valuable insight into the breadth and impact of Lean Six Sigma applications across industries.

Programme Accreditation

This course is validated by QQI at Level 8 on the National Framework of Qualifications (NFQ).

Successful learners will receive a Special Purpose Award, Diploma in Process Engineering (60 ECTS Credits).

Awards made by QQI are on the National Framework of Qualifications (NFQ).

This programme can be used as a basis for applying for ASQ (American Society for Quality) certification. Learners can sit the ASQ Black Belt certification examination. Some further self-study will be required. ASQ certification is a formal recognition by ASQ that an individual has demonstrated a proficiency within, and comprehension of, a specific body of knowledge.

Project Requirements

Prior to commencement of training, each learner must identify a suitable strategic project aligned with their organisation's objectives. The project should be scoped to deliver significant business benefits, with expected annualised savings of at least €100,000 (or €50,000 for SMEs). SQT will provide comprehensive guidelines and a sample Project Charter to assist in project selection and preparation.



How Do We Train and Support You?

We provide extensive resources and support to help learners succeed. Our learning materials draw on over 20 years of delivering Lean Six Sigma programmes and are designed to be practical and effective. Learners have full access to these resources throughout training and project work.

Our programme is distinguished by hands on mentoring from our expert Tutor team. These industry practitioners have over 100 years of combined experience leading and supporting major Lean Six Sigma initiatives. Their direct guidance helps learners navigate challenges, refine projects and achieve measurable improvements. Tutor support continues until successful completion of the project.

Company Support & Champion Training

Additional training includes a 1-day 'Introduction to Lean Six Sigma' and a 2-day 'Champion' programme for decision-makers and project sponsors.

Access to Online Learning Resources

SQT's online platform provides:

- Course notes, templates, case studies and video content.
- Additional learning materials such as links to useful external resources.
- Assessment submission and Tutor feedback via our online platform (Moodle).

Customised In-House Courses

Programmes can be tailored to your organisation's needs, ensuring exercises and content are aligned with internal processes and objectives.

Mentoring and Tutor Support

Personalised mentoring and feedback throughout the programme to keep projects on track and deliver meaningful results

Lean Six Sigma Network

Graduates can join SQT's Lean Six Sigma Network for ongoing learning, peer collaboration and best practice sharing.



Lead Change, Deliver Results

Master the tools and mindset to
lead high-impact improvement

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