

# Validation Report



**BN752**

**Certificate in Lean Six Sigma  
(Green Belt)<sup>1</sup>**

**(NFQ level 7 15 ECTS credits)**

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<sup>1</sup> See condition of validation I

## Introduction

The Institute of Technology Blanchardstown was established in 1999. The mission of the Institute is to serve its students and the community by meeting the skills needs in the economy and increasing the level of participation in third-level education and training, particularly in Dublin North-West and its environs.

The Institute in 2006 was awarded delegated authority enabling the development, validation, implementation and continuous improvement of taught higher education and training programmes up to and including level 9 of the National Framework of Qualifications.

In keeping with the Institute's mission statement, course and programme development is on-going. This programme supports the mission of the Institute and facilitates much wider access to the Institute by a cohort of potential students whose needs are currently not being met.

The purpose of this document is to report on the findings of the peer review panel established to validate this proposed programme against the criteria for the validation of programmes as stipulated in the Institute policy document 2MP01<sup>1</sup>.

This submission by the School of Informatics and Engineering in conjunction with the Learning and Innovation Centre (LINC) evolved through:

- Delivery on the strategy of the Department, School and the Institute within the framework of Government education and economic policy.
- Responding to identified skills demand for process improvement (Lean) by Forfás and industry across the manufacturing, pharmaceutical and financial sectors.

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<sup>1</sup> 2MP01 Design, validation and accreditation of new academic programmes

## Programme overview

Lean Thinking is the understanding of how to deliver value to the customer through the creation of efficient and waste-free business processes. Six Sigma is a methodology developed to focus on the elimination of variation in production and other processes. Lean Six Sigma is the combination of both methodologies resulting in the elimination of waste and the elimination of variation.

While the methodologies originated in the automotive and telecommunications industries, applications across both the manufacturing and services sectors have become widespread in the last 10 years. Expertise is measured by a hierarchal structure defined by a belt system, similar to martial arts, and designated as follows:

- **Black Belt** – Lean Six Sigma Project Leader within an organisation.
- **Green Belt** – person implementing Lean Six Sigma tools and principles under the guidance of Black Belts and may also lead on small scale Lean Six Sigma projects
- **Yellow Belt** – person with an awareness of Lean Six Sigma, following directions of practitioners as required within own role.

This programme is aimed at applicants who have at least 2 years' experience in a suitable industry, business or other organisational environment within which Lean Six Sigma can be applied.

The objective of the programme is to produce graduates at Green Belt level who are capable of leading smaller process improvement projects in organisations and participating on larger projects under the supervision of a Black Belt practitioner. Graduates will be equipped with knowledge of Lean and Six Sigma methodologies, tools and techniques and the skills to apply them to achieve measurable process improvements in organisations. They will also learn the skills required to lead and participate in teamwork activities which result in business improvements.

## Proposed programme detail

Proposed programme title	Certificate in Lean Six Sigma (Green Belt)
Proposed award title	Certificate in Lean Six Sigma (Green Belt)
NFQ level	7
ECTS <sup>1</sup> credits	15
Programme code	BN752
Banner code	BN_ELSSG_Q

## Panel composition

Chair	Dr. Dermot Douglas Higher Education Consultant
Academic expert	Mr. Brian Coll Institute of Technology Sligo
Industry practitioner	Mr. Darragh Edge IBM
In attendance	Mr. Richard Gallery Registrar, IT Blanchardstown  Mr. Michael Keane Quality Assurance Officer, IT Blanchardstown
Date of Panel Meeting	Tuesday 4 <sup>th</sup> March 2014

*Note: It was agreed at the outset that Mr Gallery would attend the meeting in an advisory capacity only. Mr Gallery has recently been appointed as Registrar (with overall responsibility for quality assurance of academic programmes) but prior to his appointment was involved in the development and submission of this programme for validation in his role as Head of Department of Engineering. In order to avoid the possibility of any conflict of interest, it was agreed that Mr Gallery would, where necessary, provide information and explanation in respect of the development and submission of the proposed programme to the panel, but that the Quality Assurance Officer would progress it through the approval processes of Academic Council.*

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<sup>1</sup> European Credit Transfer (and Accumulation) System

## Programme design team

Dr. Brian Nolan	Head of School Informatics & Engineering
Dr. Philip Owende	Head of Department of Engineering
Ms. Assumpta Harvey	LINC
Mr. Mark Keyes	LINC
Mr. Damian Cox	Department of Engineering

## Panel findings

In evaluating the appropriateness, quality and proposed operation of this programme the following criteria have been considered and are hereby reported upon:

## Strategic planning

The panel was satisfied that the programme is in keeping with the Institute's mission, that it does not constitute redundant provision and that it makes efficient use of resources.

## Evidence of consultation

From the submission document and through discussion with the programme design team the panel was informed of the depth of the consultation that took place.

## Protection of learners

Section 43 of the Act<sup>1</sup> does not apply.

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<sup>1</sup> Qualifications (Education and Training) Act, 1999

## **Demand**

Specific skills demand, identified by Forfás in their *Guidance for Higher Education providers on current and future skills needs of enterprise 2013 report* include process improvement (Lean) across the manufacturing sector, cross-disciplinary within the pharmaceutical sector, process innovation and product development within the financial services sector and creativity, design and innovation skills.

## **Quality assurance**

The panel was informed of how the proposed programme had been developed and approved internally whilst complying with the Institute's quality assurance policies and procedures. The panel was satisfied that these policies and procedures had been applied to the development of the proposed programme.

## **Programme title and award title**

Following discussion, where both trademark and QQI award title policies were highlighted, the panel advised that the award title should not include 'Six Sigma' nor allude to recognised third party industry certification. To market the proposed programme and attract industry participants the panel were of the view that the programme title could reflect the industry certification aspect of the programme, thus clarifying the programme purpose and content and provide accurate information for prospective learners and other stakeholders. See condition of validation I.

## **Ethics**

The panel was satisfied that the Institute has internal policies and procedures in place to ensure that all teaching, learning or research activity across the spectrum of NFQ levels is conducted / delivered in a manner that is both morally and professionally ethical.

## Unity

The panel found that the programme design is consistent with QQI policy on accumulation of credits and certification of subjects, that it has an underlying unifying theme with modules bonded by linkages being either implicit or explicit. However, to provide greater clarity as to how the standards of knowledge, skill and competence in relation to Lean Six Sigma evolve throughout the programme as a whole the panel require that the 'Lean Principles and Six Sigma' and 'Statistics' modules as currently drafted be reconfigured to provide the prospective learner with a clearer understanding that the programme is delivered according to a clear DMAIC<sup>I</sup> framework. Furthermore the panel considered that the proposed delivery of the programme within a 12 week period was overly ambitious and advised the programme design team that they needed to consider a two semester approach that would at least address the design and measure elements of the programme framework prior to learners commencing the project. This would see the project beginning in a second semester. See condition of validation III.

## Teaching and learning

The panel discussed with staff of the Institute the various modes of interaction with learners. Evidence of a clear dialogue was confirmed, enabling learners to develop and have available to them the support of academic staff. Course management arrangements were discussed and deemed adequate.

## Progression - industry certification

The panel recommended that learners be provided with a roadmap clearly outlining how the industry certification for 'Lean Six Sigma Green Belt' could be pursued following successful completion of this programme. To support this, the panel recommended that the module syllabi be aligned appropriately to the ASQ<sup>II</sup> Lean Six Sigma Green Belt Body of Knowledge. See condition of validation IV.

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<sup>I</sup> Define, Measure, Analyse, Improve and Control

<sup>II</sup> American Society for Quality

## **Learner assessment**

Through discussion with the design team, and from the submission document itself it was explained in detail to the panel the multiple modes of assessment, both formal and informal that will be employed on the programme. The panel deemed these to be adequate. The panel, however, recommended that the syllabus of the 'Project' module be revised such that projects must demonstrate a verified financial saving and that the assessment tool to be used in the event whereby a project for whatever reason post admission cannot be completed be clearly identified. See condition of validation V.

## **Standards of knowledge, skill and competence**

The panel having reviewed the syllabi and assessment methods for the programme was of the opinion that learners would be capable of attaining the standards of knowledge, skill and competence relevant for this NFQ level 7 special purpose award. The panel however requested that the proposed programme standards be mapped appropriately against the QQI award standards for both business and engineering. See condition of validation II.

## **Panel observations**

The panel found the submission to be a detailed and responsive initiative aimed at addressing an identified skills demand within Irish industry, locally and nationally.



## Decision of the panel

The panel recommends the validation of the proposed programme subject to the conditions outlined below:

Banner code	ITB code	Programme title	Award title	NFQ level and ECTS credits	Format
BN_ELSSG_Q	BN752	Certificate in Lean Six Sigma (Green Belt)	Certificate in Quality Management (Lean Practice)	Level 7 15 credits	Special purpose

## Conditions of validation

- I. The award title of the programme must be compliant with QQI policy, not infringe existing trademarks i.e. ‘Six Sigma’ nor allude to recognised third party industry certification. To market the proposed programme and attract industry participants the panel recommends that the programme title reflect the industry certification aspect of the programme hence making the programme title clear, accurate and fit for the purpose of informing prospective learners and other stakeholders.
- II. In compliance with QQI policy, map the programme standards as appropriate against each of the relevant published award standards namely business and engineering.
- III. Revise the programme structure and proposed content to:
  - Make more explicit the DMAIC framework and associated tools used within the delivery of each of the constituent modules.
  - Extend the duration of the programme over two semesters.  
Suggested scheduling as follows:
    - Module 1 DMAIC framework - Define and Measure
    - Module 2 DMAIC framework - Analyse, Improve and Control
    - Lean Six Sigma Project
- IV. Provide a roadmap for learners clearly outlining how the industry certification for ‘Lean Six Sigma Green Belt’ could be pursued following

successful completion of this programme. Review and align module syllabi appropriately to the 'ASQ Six Sigma Green Belt Body of Knowledge' or other appropriate Six Sigma industry certification body.

- V. Revise the assessment of the project module such that:
- Projects must demonstrate a verifiable financial saving. The project must include a pre-defined and agreed financial saving for the company and a relevant finance officer of the company must sign off that this has been achieved in order for the learner to receive the award.
  - The assessment tool to be used in the event whereby a project for whatever reason post admission cannot be completed be clearly identified and fully described. It should be made clear to learners who follow this path that it will not be possible for them to progress to industry certification of a 'Green Belt' as a necessary prerequisite for this is to have completed a project that delivered a real financial saving to a named company.
- VI. Revise and resubmit the programme document to comply with each of the conditions and recommendations as outlined by the panel indicating where each has been addressed.

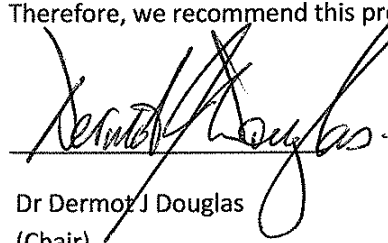
## Recommendations

- Reconsider the minimum entry requirements to provide more flexibility in admission as discussed at the panel meeting.
- Re-title the 'Improvement Project' module to more accurately reflect what it is i.e. 'Lean Six Sigma Project'.
- Revise the web-based, software and reading resources in the final document and on Coursebuilder to ensure realistic and coherent resources are identified to support the learner in their personal learning and during the completion of their industry based projects.
- Make other minor and technical amendments as discussed at the panel meeting.

**Panel Evaluation of the Programme Team Response to Conditions of Validation**

I have read the amended programme submission document for the Certificate in Quality Management (Lean Practice), and have received feedback from the other members of the External Review Panel, who have also received and reviewed the amended documentation, and I can state that that it addresses, in a satisfactory manner, all the conditions set by the panel.

Therefore, we recommend this programme for validation to the QQI



Dr Dermot J Douglas  
(Chair)

(Signed on behalf of the External Review Panel)

Date: 16/06/2014

Mr. Richard Gallery

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Date

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