NEW PROGRAMME VALIDATION REPORT

Bachelor of Science (Honours)

in

Product Innovation & Design

(Programme BN123)

Institute of Technology Blanchardstown,

Blanchardstown Road North, Dublin 15,

D15 YV78 | www.itb.ie

VALIDATION PANEL DATE: June 18, 2018

Introduction

The Institute of Technology Blanchardstown has the Delegated Authority from the [Quality and Qualifications Ireland](#), to; develop, validate, implement and continuously improve its existing taught higher education and training programmes up to and including programmes in Level 9 of the [National Framework of Qualifications](#).

The purpose of this document is to report on the findings of the Peer Review panel that was established to validate this proposed programme against the criteria for the validation of programmes as stipulated in the Institute Policy Document 2MP01[1].

Programme Overview

Regional and local contexts to programme

The Institute of Technology Blanchardstown (ITB) campus is located in heart of the Fingal, a key administrative area within the newly established East and Midlands Regional Assembly (EMRA). Fingal plays a strong supporting role to the Dublin City Gateway— Ireland's economic growth centre. Fingal also holds a clustering of business sectors. The Fingal County Council Corporate Plan 2015-2019 identifies the key business sectors, as: Information and Communication Technology sector, comprising some of the world's leading companies such as Synopsys, IBM, PayPal and Symantec, and; the Healthcare/Pharmaceutical sector, including leading companies such as Bristol Myers Squibb, Alexion and Mylan. The Institute sits within an area supported by a strong supply of both industrial and residential of zoned land. Notably, ITB is bordered by land zoned under the Fingal Development Plan 2017 -2023[2] to accommodate *High Technology Industries*. Recent high profile announcements such as Amazon's plan to build a €1bn data centre campus in the vicinity of the ITB campus[3] serves to highlight the fast pace of high technology development within the Blanchardstown North region.

As part of the Institutes current strategic plan, the Institute has committed to:

"Dissolution of 'false divides' among engagement, teaching and learning, research and innovation and achievement of a much deeper integration among them will support advancement of interdisciplinary programmes and activities"[4].

While endeavouring to ensure the School of Informatics and Engineering plays its part in helping the Institute meet its strategic plan, as well as ensuring the Fingal area meets its ambitious development plan 2017-2023; the Department of Engineering at ITB has undertaken an examination of its current portfolio of Engineering programmes and identified an opportunity to provide additional educational opportunities for its target population area to become part of the growing high tech sector within the Fingal area. Also, through the provision of high quality graduates, possessing the skillset needed to provide the necessary human capital to support high tech growth within the Fingal region.

Programme rationale and the proposed delivery approach

On entering the workforce, Technology and Engineering graduates must respond to continually changing technology needs in a creative and enterprising way. This is driven by the need for industry to constantly innovate to remain competitive; indeed, recent reports funded by the Irish government[5] have identified digital design, product design and strategic design as three design disciplines that Ireland needs to focus on to remain competitive. These being primarily in the STEM discipline areas, encouraging school leavers to

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[1] 2MP01 Design, Validation and Accreditation of New Academic Programmes

[2] https://www.fingal.ie/planning-and-buildings/development-plans-and-consultations/fingaldevelopmentplan2017-2023/

[3] https://www.independent.ie/business/technology/news/amazon-planning-1bn-data-centre-campus-in-dublin-35517462.html

[4] ITB Strategic Plan 2016 – 2019 http://www.itb.ie/aboutitb/documents/StrategicPlan_Dec16_000.pdf

[5] EGFSN. 2017. Winning by Design; An introduction to the design skills required for firms to be innovative and competitive in global markets. Dublin, Expert Group on Future Skills Needs (EGFSN); http://www.skillsireland.ie/Publications/2017/Winning%20by%20Design.pdf

choose STEM disciplines is an ongoing priority and equally a challenge. The challenges are in part, due to the complex educational/training environment, where prioritisation of *equity-of-access* is challenging higher educational institutes to re-imagine the approach to offering of STEM programmes; the key motivators for development of this *BSc (Honours) in Product Innovation and Design* that is to be considered for validation.

The proposed programme, which is designed to run over 4 years (8 semesters) in Full Time offering, aims to equip students with the knowledge and skills requirements for the future workplace where workers are increasingly required to have skills that crossover several disciplines. Increasingly workers in the technology sector must be agile and adaptive to changing technologies and changing technology trends.

The programme lays emphases on learning through project-work, based on real world scenarios. This is enabled by incorporating 15 ECTS Credits studio, portfolio and project blocks in each semester of years 1 and 2. Students will also undertake significant *Design Project* and *Capstone Project* in semester 2 of years 3 and 4, respectively. In year 3, learners choose their specialisation stream that include, *Wearable Technologies, Smart Systems, and Entrepreneurship*. The programme consists of Embedded Awards at NFQ Level 6, 7, and also offers an NFQ Level 8 Add-on Programme that are all under consideration for validation.

The proposed *Higher Certificate in Science in Creative Maker Technologies* (NFQ Level 6) will run over two years, and aims to train Technologists and Technicians with skills in digital fabrication and knowledge of the technology based product creative design process. The **BSc in Product Innovation and Design** (*Ab-initio*, NFQ Level 7) will train technicians and technologists to meet the role requirements for technicians in product design environments. The Add-on **BSc (Honours) in Product Innovation & Design** will provide opportunity for technicians, technologists and ordinary level engineering graduates to up-skill for higher-level development & leadership roles within technology and engineering product innovation, production & design environments.

Validation Panel Composition

Chair: Dr Brendan O Donnell,
                          Vice-President, Academic Affairs & Registrar, Institute of Technology Tralee.

Member(s): Academic   Úna Parsons,
                          Head of School of Engineering & Design,
                          Institute of Technology, Sligo, Ash Lane, Sligo,

                          Dr Anne J. Morrissey, Associate Professor and Principal Investigator,
                          School of Mechanical and Manufacturing Engineering, Stokes Building, DCU.

Member(s): *Business/Industry*
                          Enrico Gentili,
                          Principal Director, Emerging Technology Gallia Lead, Director of Software
                          Engineering, The Dock, Accenture.

In attendance: Dr Larry McNutt, Registrar, IT Blanchardstown (Panel Secretary)

                          Dr Philip Owende, Academic Quality Manager, IT Blanchardstown

Date of Panel Meeting: June 18, 2018.

Consultation

Management Team consulted during the panel meeting:

Dr Anthony Keane	Head of School of Informatics & Engineering
Richard Gallery	Head of Department of Engineering
Daniel McSweeney	Head of Department of Informatics
Dr Fiona Malone	Head of Department of Business

Academic staff contributing to programme development and consulted during the panel meeting:

Paul Stacey	Senior Lecturer in Engineering (Programme Development Lead)
Michelle Looby	Senior Lecturer in Mechatronic Engineering (Programme Development Lead)
David Carroll	Lecturer in Computer Engineering
Nicola Duffy	Lecturer in Creative Digital Media
Dr Arnulf Horn	Lecturer in Computer Engineering
David Powell	Lecturer in Computer Engineering
Damian Cox	Lecturer in Mathematics
Amanda Dixon	Lecturer in Business
Dr Darren Lavelle	Lecturer in Mechatronic Engineering
Benjamin Toland	Lecturer in Computer Engineering
Fergus Maughan	Lecturer in Mechatronic Engineering
Anne Marie McKeon	Lecturer in Business & IT/Process Instrumentation
Mary Cowan	Lecturer in Mechatronic Engineering
Ivan Smyth	Lecturer in Computer Engineering
Cormac McMahon	Lecturer in Engineering
Gerome Donnelly	Lecturer in Computing
Dr Barry Kirkpatrick	Lecturer in Computer Engineering
Sandra Thomson	Lecturer in Business
Bairbre Brennan	Lecturer in Digital Marketing
Ciaran O'Brien	Technical Officer, Engineering

The programme development process has been supported by the following heads of function:

Dr Larry McNutt	Registrar
Dr Philip Owende	TU4Dublin Academic Quality Manager
Dr Cormac Doran	Director of Centre for Higher Education Research Policy & Practice (CHERPP)
Claire MacNamee	Manager Learning & Innovation Centre (LINC)

Validation Panel Findings

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

Strategic planning

The panel was satisfied that the programme and the design are in keeping with the Institute's mission, do not constitute redundant provision, and consider efficient deployment of associated resources.

Evidence of consultation

The programme development process sought for and considered inputs from: academic staff involved in the delivery of creative digital media programmes; learner representatives; graduates of the supporting undergraduate programmes; potential employers, business and practitioners, and; technical staff representatives. Through the structured discussions with the management, and the programme design and delivery teams during the validation panel visit, the panel established evidence that comprehensive research/consultation efforts were undertaken with both internal and external stakeholders, to validate the rationale and the adopted structure, pathways and characteristics of the proposed programme.

Graduate employment potential

The panel was of the opinion that there are a wide range of career opportunities for graduates, and based on core knowledge and competence outcomes of the proposed programme, such graduates would be of immediate value to industry.

Protection of enrolled learners

Part 6 Section 65(1) of the Act[6] does not apply.

Provisions for quality assurance

The panel was informed of how the programme submission had been proposed, developed and approved internally, in compliance with the Institute's quality assurance policies and procedures. The panel noted that the Institute's policies and procedures for programme development, monitoring and continuous improvement complied with the current national guidelines.

Programme title and award title

The panel was satisfied that the title of the proposed programme is clear, accurately reflects the coverage, and therefore will be able to accurately inform prospective learners and other stakeholders. They are consistent with QQI award titles.

Ethics

The panel was satisfied that the Institute has internal policies and procedures in place to ensure appropriate ethical oversight in respect of teaching, learning, and research activity across all programmes in the NFQ levels covered.

Consistency

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 both implicit and explicit linkage of modules. The panel was contented with expectation in progressive development of the learners' standards of knowledge, skill and competence throughout the individual modules and the integrated programme outcomes.

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[6] Qualifications and Quality Assurance (Education and Training) Act 2012

Teaching and learning

The panel discussed with the programme development team about the range of interactions used with learners in the course of programmes delivery. Course management arrangements were also discussed and were deemed adequate. The panel observed clear evidence of planned interactions with and comprehensive academic and technical support arrangements for learning.

Learner assessment

Through discussion with the programme design team, the multiple modes of assessment to be employed (both formal and informal) were articulated. The Institute's policy on continuous assessment, based on objective development/enhancement of learners' application of knowledge and critical analysis and problem solving skills within specific timeframes were highlighted. The panel encouraged the consideration of cross-modular assessment events to minimise the volume of assessment across the taught modules.

Standards of knowledge, skill and competence

Having reviewed the syllabi and assessment methods as proposed, the panel was of the opinion that learners would be capable of attaining the standards of knowledge, skill or competence relevant for the award of *Bachelor of Science (Honours) in Product Innovation & Design*.

Access, transfer and progression

The panel confirmed that the programme incorporates well-established procedures for access, transfer and progression. These are provided for per the Institute's Policy *3AD08 Admissions Policy*.

Other salient considerations

In the programme validation process, the panel interacted with Institute management team in the Programme Level Discussion, and with the programme development team in comprehensive Module Level Discussions.

The programme level discussion enabled the panel to gain an overview of the proposal, and to confirm the strategic relevance and the inherent institutional support for the proposed programme. The timeliness of the proposed programme in the context of Institute's application for Technological University designation (under Dublin Technological University consortium, in partnership with DIT and IT Tallaght), hence, the validation process was discussed in detail with the management team.

The module level discussions considered the panel members' observations and queries related to the programme proposal, beginning with a justification of the overarching programme structure. It also covered a module-by-module analyses and discussions with the programme team. Some notable issues and points of discussion, included:

(1) Why have a module with 25 credits? How will it managed? How is it assessed? Noted that the indicative syllabi were very light on some important details.

(2) Requirement for supplementary guidance documents for projects, which is especially important considering that multidisciplinary projects are proposed.

(3) Noted substantive errors and omissions in the module descriptors, including assigned ECTS Credits weighting, assessment breakdowns, and linking of assessment to learning outcomes.

(4) Indication that some modules will be delivered online, but lack detail on how such have been designed for online delivery⸺ panel noted that some internal process to validate any module for delivery online delivery is required.

(5) Programme team justified that, internal experience with *Innovation Vouchers* and *Start-up Companies* has shown the need for programme weighting on understanding of design process that enable rapid progression to prototyping stage with the initial project conceptualisation.

Decision of the Panel

The panel recommends validation of the following four programmes with Conditions[7]/Recommendations[8]:

Programme title:	**Bachelor of Science (Honours) in Product Innovation and Design**
Programme code:	BN123
Award Title:	Bachelor of Science (Honours)
NFQ level:	8 (240 ECTS credits)

Programme title:	Bachelor of Science in Product Innovation and Design
Programme code:	BN049
Award Title:	Bachelor of Science
NFQ level:	7 (180 ECTS credits)

Programme title:	Higher Certificate in Science in Creative Maker Technologies
Programme code:	BN050
Award Title:	Higher Certificate in Science
NFQ level:	6 (120 ECTS credits)

Programme title:	Bachelor of Science (Honours) in Product Innovation and Design
Programme code:	BN427
Award Title:	Bachelor of Science (Honours)
NFQ level:	8 (*Add-on to BN049*, 60 ECTS credits)

Conditions

(1) The programme to adopt multidisciplinary contexts as the default/preferred approach to assessment of project work.

(2) Programme to include a comprehensive projects handbook to support point (1) above, coupled with appropriate staff training on requirements for its sustainable implementation.

(3) The ethos of the programme is to create a graduate who can work as part of a multidisciplinary team. This must be clearly articulated and supported with appropriate guidelines, e.g., relating to how to facilitate workshops in the learning process, team-management skills etc.

(4) The programme submission document to be re-edited to eliminate errors and omissions, and to update any agreed areas (see the separate *Supplementary Notes* supporting this Validation Panel Report). The updated validation document is to be resubmitted to the panel together with the *Projects Handbook* and *Placement Handbook*.

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[7] A condition is an action, which in the opinion of the validation panel, must be undertaken prior to the commencement of the programme. Conditions are mandatory for programme approval.

[8] A recommendation is a proposed action, which in the opinion of the validation panel, must be given serious consideration.

(5) To comprehensively review the overall assessment schedule in order to moderate any duplication and/or possible over-assessment, and where possible, consider integrated assessment between modules. This should lead to an overall reduction in the volume of assessment.

(6) Programme viability should be enhanced where possible, by considering appropriate modules that are already approved rather than developing new modules.

(7) Expected roles of graduates of the programme to be clearly outlined.

(8) The Research Methods & Tech Writing Module H3021 should be relocated to Year 4 of programme.

Recommendations

(1) There is need for clear procedure to support realisation of the one module per semester delivered online. Specifically, the procedure to ensure that conversions of modules from face-to-face contents delivery to online delivery ensures parity in achievement of the prescribed learning outcomes.

(2) Need to build in learner-preparation for placement prior to the scheduled placement programme.

(3) Learning Outcomes in Module H2012 Information System & Applications should be embedded in one of the 15 ECTS Project modules. Subject areas considered to replace the 5 credits are such as: CAD, Physics, and QA standards/validation.

(4) Standardise all expected contact hours to the normal semester duration of 12 weeks.

Commendations

(1) ITB is delivering a unique programme that is responding to the market demands and additional entry pathways to technology-oriented programmes.

(2) Addresses a deficit in attraction of a cohort of potential student who are not traditionally attracted to technology oriented degree programmes.

(3) The programme team engaged the panel in informative discussion on the proposed programme.

(4) Designing for BSc award and encompassing a comprehensive variety of practical subjects is commendable.

Validation Report Sign-off

Chair

_____   _____
Dr Brendan O Donnell   Date

Secretary

_____   _____
Dr Larry McNutt   Date