INSTITUTE OF TECHNOLOGY BLANCHARDSTOWN

SCHOOL OF INFORMATICS & ENGINEERING

DEPARTMENT OF INFORMATICS

NEW PROGRAMME VALIDATION REPORT

Bachelor of Science (BSc)

in

Computing in Cloud Enterprise Architecture

(BN316)

[Add-On National Framework of Qualification Level 7 Programmes, 60 ECTS]

Institute of Technology Blanchardstown,
Blanchardstown Road North, Dublin 15,
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VALIDATION PANEL DATE: June 11, 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

An unrelenting constraint on the growth of the Information and Communication Technology (ICT) sector has been the persistent shortage in the number of ICT practitioners available to fill the expanding number of related jobs. The national ICT Skills Action Plan estimates that higher education currently only meets 60% of domestic demand for professional IT skills in Ireland[2]. A recent study by the London School of Economics identified a deficiency in Cloud expertise affecting business performance and operations[3]. Seventy one percent of IT decision makers report that their organisations have lost revenue due to a lack of Cloud expertise. In addressing the needs of the Irish market, Technology Ireland ICT Skillnet issued a request for tenders for offer of a BSc in Cloud Enterprise Architecture.

This Bachelor of Science in Computing in Cloud Enterprise Architecture was designed in collaboration with ICT Skillnet and Industry. The programme aims to address current industry qualification, skills and knowledge shortfalls in the ICT sector, by producing graduates with a combination of technological know-how, creative problem solving skills, and professional understanding and competence to function in IT dependent organisations. The primary objectives of the programme are to produce graduates who:

- Have the necessary skills to design, install, configure and operate different components of Cloud systems and to and apply appropriate critical and practical design skills to their work.
- Are able to recognise the opportunities and limitations of Cloud systems, their implementation platforms, and how these tie in with organisation objectives. They will possess knowledge of new and emerging technologies and a close familiarity with best practice and emerging trends in the profession.
- Are able to apply detailed working knowledge of project management, lifecycle development, and other professional practices to their work in the development of solutions, including their role in project teams and that of other colleagues at a mid to senior level.
- Can work effectively as individuals, in teams and in multidisciplinary settings by communicating effectively with other professionals working in the information technology community, such as computer scientists, marketing specialists, business managers, and information security specialists.
- Have adequate interpersonal and professional skills to work within a business environment, understanding the requirements of modern industrial organisations.
- Will be able to pursue Continuing Professional Development (CPD), demonstrating a capacity to undertake lifelong learning.

This programme builds on the model of BN031 - Higher Certificate in Science in Computing in Networking Technologies, the first programme in ITB's Learn and Work suite[4].

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

[2] http://hea.ie/assets/uploads/2017/06/ICT-Skills-Action-Plan-2014-2018.pdf

[3] http://www.lse.ac.uk/business-and-consultancy/consulting/consulting-reports/the-cost-of-cloud-expertise

[4] http://www.itb.ie/industryinnovation/learnwork.html

Validation Panel Composition

Chair: Mr Terry Twomey,
VP Academic Affairs & Registrar,
Limerick IT.

Member(s): *Academic* Mr. John Kelleher
Head of Dept. of Comp & Creative Practice,
IT Sligo, Ash Lane, Sligo.

Nigel Whyte
Head of Department of Computing at Institute of Technology Carlow,
IT Carlow, Kilkenny Road, Carlow.

Member(s): *Business/Industry*
Tony Davitt,
Technical Solutions Architect
Cisco Systems Internetworking (Ireland) Limited

Robert Young
Manager, Technical Support,
Citrix Systems International.

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

Dr Philip Owende, Academic Quality Manager, IT Blanchardstown

Date of Panel Meeting: June 11, 2018.

Consultation
Management Team consulted during the panel meeting:

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

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

Tom Nolan	Lecturer in Informatics
Aoife Fox	Lecturer in Informatics
Dr Christina Thorpe	Lecturer in Informatics
Peter Alexander	Lecturer in Informatics
Michael Hegarty	Lecturer in Informatics
Dr Kyle Goslin	Lecturer in Informatics
Gerome Donnelly	Lecturer in Informatics

Industry/Education and Training Partners Representative in attendance:

Tony Devlin	Chairperson, ICT Ireland Skillnet

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 department of informatics programmes; learner representatives; 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 components 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[5] 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. The Institute has procedures for the periodic revalidation (normally every five years) of the programmes it validates, and the validation and revalidation reports are published.

Programme title and award title
The panel considered and made recommendations (see panel recommendations later) regarding the title of the proposed programme. The specific recommendation will accurately inform prospective learners and other stakeholders. The award title is 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.

[5] 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 deemed adequate. The panel observed clear evidence of planned interactions with and comprehensive academic and technical support arrangements for learners.

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 the Bachelor of Science.

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 adequacy of institutional supports 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 highlighted by 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 points of discussion, included:

(1) Assessment in module *CCEA H3013 Cloud Architecture* was deemed to be thin on detail. In addition, the 35% assessment weighting that is currently allocated to a single MCQ test should be reconsidered. Review of the learning outcomes is required considering that it is a 10 ECTS module.

(2) Module *CCEA H3011 Network Programming* covers significantly high content but, from the course description, it was unclear what is to be covered in-depth.

(3) Module *CCEA H3012 Enterprise Routing & Switching* is offered as practical module, but the panel noted that 50% of assessment is weighted on the final examination. Programme should consider reverting it to 100% CA. Assessment criteria should be pegged on testing the achievement of learning outcomes only and not the weighting of assessment type.

(4) For module *CCEA H3016 Group Project*, it is important to clearly articulate how the groups are managed. Ideally, and at the earliest opportunity, the general configuration and management strategy for group projects must be clearly spelled out to students. More importantly, learning outcomes in group projects

should clearly define such outcomes that must be met by group members, individually and in collaborative efforts.

(5) There is need to clearly specify repeat provisions for all modules.

(6) On resourcing of the cloud element, AWS is currently used on the basis of educational pricing that is on offer. However, modules are structured such that they will not be cloud technology dependent. Lab-work are design against different vendor/provider technologies. Student also choose their own project, which may include platform of choice.

(7) The panel reiterated the importance minimizing vendor-specific approaches in technologies used, but still facilitate technology comparisons. It was noted that the different modules provide exposure to different platforms available in the market while focusing on a few for in-depth study/analyses.

Decision of the Panel

The panel recommends validation of the following programme with Recommendations[6]:

Programme title: Bachelor of Science in Computing in Cloud Enterprise Architecture

Programme code: BN316

Award Title: Bachelor of Science

NFQ level: 7 (60 ECTS credits)

Conditions of Validation

None

Recommendations

The panel provided the following recommendations:

Programme Level Recommandations

(1) The programme title has not been thought through to Level 8 provision. Coming from a networking background, architecture seems a bridge too far. Cloud network architecture is closer to describing content.

(2) Research informed and research-led programmes require support from a research theme. Therefore, Cloud research should be priority

(3) Schedule of FT/PT that require common resourcing need to be thought-through

(4) Need to provide Assessment Metrix to indicate the workload on students. Consider opportunities for cross-modular assessment

Module Specific Recommendations

(5) Consider offering assessment credits for labs on the Network Programming and Enterprise Routing & Switching modules for consistency between modules.

(6) Flesh out descriptor for Cloud Architecture module. Reconsider the high weighting (35% MCQ) in the assessment.

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

(7) In the Software Defined Networking important to focus on market-based technologies, important to include comparison/contrasts

(8) Group Project. Assessment basis need to be detailed. Working effectively as part of a group should be a learning outcome in its own right. If it is the intention that a student can fail on basis of group-work, then group-work participation need to be defined.

(9) Consideration should be given to the type of projects and the enterprise problem/issue foci.

Commendations

The panel commended the following aspect of the proposed programme and validation process:

(1) Engagement with Technology Ireland ICT Skillnet is commendable;

(2) The Institute management and the staff involved in programme development engaged with the panel

(3) The programme strongly addresses both regional and national industry skill needs;

(4) The panel commended the high quality and readability of the documentation.

Validation Report Sign-off

Chair

_____ _____

Terry Twomey Date

Secretary

_____ _____

Dr Larry McNutt Date