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Dearbhú Cáilíochta agus Cáilíochtaí Éireann

Independent Evaluation Report on an Application for Validation of a Programme of Education and Training

Part 1

Provider name	National College of Ireland
Date of site visit	5th February, 2020
Date of report	23/04/2020

Overall recommendations

Principal programme	Title	Higher Diploma in Science in Computing
	Award	Higher Diploma in Science
	Credit	120
	Recommendation *Satisfactory OR Satisfactory subject to proposed conditions OR Not Satisfactory*	Satisfactory

Evaluators

Evaluators		
Name	**Role**	**Affiliation**
Mr Danny Brennan	Chair	Former Registrar, Letterkenny Institute of Technology and Principal, DNB Education Consultants
Dr Catherine Peck	Recording Secretary	Independent Education Consultant
Professor Keshav Dahal	Subject Expert	University of the West of Scotland, UK
Dr Irene Murtagh	Subject Expert	Technological University, Dublin (Blanchardstown)
Dr Jelena Vasic	Subject Expert	Technological University, Dublin (Tallaght)
Mr Iain Hull	Industry Expert	Workday, Ireland
Mr Cathal Curry	Student Member	Dublin City University

Principal Programme

Names of centres where the programmes are to be provided	Maximum number of learners *(per centre)*	Minimum number of learners
National College of Ireland, IFSC Campus	380	15

Enrolment interval *(normally 5 years)*	Date of first intake	September 2020
	Date of last intake	August 2025
Maximum number of annual intakes	6 (1 Full-time, 1 Part-time and 1 Online/Blended intake in September and January)	
Maximum total number of learners per intake	- Full-time - 20 - Part-time - 100 - Online/Blended - 70	
Programme duration (months from start to completion)	1 year	
Target learner groups	The College has a diverse learner profile. Approximately 50% of NCI's learners are part-time learners and study at its IFSC campus or at one of its locations in its Off-Campus Network (part-time learners only).	
Approved countries for provision	Republic of Ireland	
Delivery mode: Full-time/Part-time	Full Time, Part Time and Online/Blended	
The teaching and learning modalities	The teaching and learning approaches combine different strategies, including traditional classroom lectures, tutorials and seminars, flipped classroom, problem and project-based learning, team work and work-based learning.	
Brief synopsis of the programme (e.g. who it is for, what is it for, what is involved for learners, what it leads to.)	This programme is a 1-year Level 8 degree aimed at Level 8 graduates or mature applicants who wish to follow a career in computing. The programme will run both in part-time and full-time mode in order to cater to the different types of students. The students will have to attend lectures and tutorials in the classroom or online over the academic year, as well as to study independently. Students will study for 1 stage taking modules that cover topics such as Software Development, Introduction to Databases, Object Oriented Software Engineering, Computer Architecture Operating Systems and Networks, and modules in the chosen area of specialisations such as Algorithms and Advanced Programming, Cloud Application Development, IoT Application Development, Security Principles and Secure Programming, Artificial Intelligence , Blockchain Application Development and Advanced Client Side Development.. An important component of the programme will be the Project module. The programme leads to a NFQ Level 8 Higher Diploma in Science in Computing awarded by QQI. Graduates of this programme	

		may pursue further education or employment in the field of computing. academic award
Summary of specifications for teaching staff	**WTE**	**Qualifications and experience**
	2	Lecturers with a PhD or Masters level qualification in computing or a related discipline with academic experience delivering modules in ICT and Programming at level 8 on NFQ.
	1	Programme Director who is responsible for the academic management of the programme and may also be a lecturer on the programme. The programme director will have at least a Masters or PhD qualification in computing or a related discipline.
	1	Programme Co-ordinator with experience in relationship management and programme coordination.
Summary of specifications for the ratio of learners to teaching-staff	**Staff to learner ratio**	**Learning activity type**
	1: 60	Lectures
	1: 25	Tutorials/Labs
Overall WTE staff/learner ratio	1:95	

Programmes being replaced (applicable to applications for revalidation)		
Code	**Title**	**Last enrolment date**
PG22523	Higher Diploma in Science in Computing	January 2020

Other noteworthy features of the application

Not Applicable

Part 2 Evaluation against the validation criteria

QQI's validation criteria and sub-criteria are copied here in grey panels.

Criterion 1

The provider is eligible to apply for validation of the programme
a) The provider meets the prerequisites (section 44(7) of the 2012 Act) to apply for validation of the programme.
b) The application for validation is signed by the provider's chief executive (or equivalent) who confirms that the information provided is truthful and that all the applicable criteria have been addressed.
c) The provider has declared that their programme complies with applicable statutory, regulatory and professional body requirements.

Satisfactory (yes, no, partially)	Comment
Yes	

Principal programme

The panel is satisfied that NCI is eligible to apply for revalidation of the programme.

NCI has complied with section 44(7) of the 2012 Act. NCI had its procedures for quality assurance (QA) approved by QQI in 2019. During the revalidation panel's site visit in 2020, the panel explored how specific aspects of NCI's QA were operationalized in relation to the proposed programme (for example, supports for learners and the continuing professional development of teaching staff). Following these discussions with NCI's representatives, the panel were satisfied that the provider's institutional QA fully comprehend the programme submitted for revalidation. The provider has also outlined procedures for access, transfer and progression, which are discussed under Criterion 4 in this report.

A declaration accompanying the application for revalidation has been signed by the acting Head of the Coordinating Provider, Vice President Professor Jimmy Hill on behalf of Gina Quin, President of NCI. This declaration verifies the accuracy of the information provided, as well as providing an assurance that resources are in place to deliver the programme. The declaration further states that the proposed programme complies with applicable statutory, regulatory and professional body requirements.

Criterion 2

The programme objectives and outcomes are clear and consistent with the QQI awards sought	
a) The programme aims and objectives are expressed plainly.	
b) A QQI award is specified for those who complete the programme.	
(i) Where applicable, a QQI award is specified for each embedded programme.	
c) There is a satisfactory rationale for the choice of QQI award(s).	
d) The award title(s) is consistent with unit 3.1 of QQI's *Policy and Criteria for Making Awards.*	
e) The award title(s) is otherwise legitimate for example it must comply with applicable statutory, regulatory and professional body requirements.	
f) The programme title and any embedded programme titles are	
(i) Consistent with the title of the QQI award sought.	
(ii) Clear, accurate, succinct and fit for the purpose of informing prospective learners and other stakeholders.	
g) For each programme and embedded programme	
(i) The **minimum intended programme learning outcomes** and any other educational or training objectives of the programme are explicitly specified.	
(ii) The minimum intended programme learning outcomes to qualify for the QQI award sought are **consistent with** the relevant QQI awards standards.	
h) Where applicable, the **minimum intended module learning outcomes** are explicitly specified for each of the programme's modules.	
i) Any QQI minor awards sought for those who complete the modules are specified, where applicable.	
For each minor award specified, the minimum intended module learning outcomes to qualify for the award are consistent with relevant QQI minor awards standards.	

Satisfactory (yes, no, partially)	**Comment**
Yes	

Principal programme

The panel is satisfied that NCI's application meets this criterion. The programme aims and objectives are expressed clearly in the programme documentation presented by NCI. A QQI award is specified for those who complete the principal programme: *Higher Diploma in Science in Computing*. This award title is consistent with unit 3.1 of QQI's 2014 Policy and Criteria for Making Awards. The panel is of the view that the award title is appropriately informative to prospective learners and other stakeholders, and represents the programme clearly and accurately for this purpose.

NCI has submitted comprehensive documentation, in which both the minimum intended programme learning outcomes (MIPLOs) and minimum intended module learning outcomes (MIMLOs) are explicitly specified. The programme team have mapped the MIPLOs to the Computing QQI Awards Standards (*Level 8*). The panel is of the view that NCI has provided sufficient evidence that attainment of the MIPLOs is consistent with those standards.

Criterion 3

The programme concept, implementation strategy, and its interpretation of QQI awards standards are well informed and soundly based (considering social, cultural, educational, professional and employment objectives)

a) The development of the programme and the intended programme learning outcomes has sought out and taken into account the views of stakeholders such as learners, graduates, teachers, lecturers, education and training institutions, employers, statutory bodies, regulatory bodies, the international scientific and academic communities, professional bodies and equivalent associations, trades unions, and social and community representatives.

b) The interpretation of awards standards has been adequately informed and researched; considering the programme aims and objectives and minimum intended programme (and, where applicable, modular) learning outcomes.

    (i) There is a satisfactory rationale for providing the programme.

    (ii) The proposed programme compares favourably with existing related (comparable) programmes in Ireland and beyond. Comparators should be as close as it is possible to find.

    (iii) There is support for the introduction of the programme (such as from employers, or professional, regulatory or statutory bodies).

    (iv) There is evidence of learner demand for the programme.

    (v) There is evidence of employment opportunities for graduates where relevant.

    (vi) The programme meets genuine education and training needs.

c) There are mechanisms to keep the programme updated in consultation with internal and external stakeholders.

d) Employers and practitioners in the cases of vocational and professional awards have been systematically involved in the programme design where the programme is vocationally or professionally oriented.

e) The programme satisfies any validation-related criteria attaching to the applicable awards standards and QQI awards specifications.

Satisfactory (yes, no, partially)	Comment
Yes	

Principal programme

The panel is satisfied that NCI's application meets this criterion. The programme team have engaged in formal and informal consultation with employers in the process of reviewing and preparing the programme proposed for revalidation. This has been facilitated via an industry panel, and additionally through regular interactions with employers hosting NCI students on work-placement. NCI provided the revalidation panel with an overview of the ICT knowledge requirements indicated, listed by company in its programme documentation. A further list of employers directly involved in validating the programme concept was provided. These included RTE, Bank of Ireland, Deloitte, Mediateam, ConsenSys, Ergo and Workday, among others.

In addition to industry consultation, the programme concept has been informed by the outcomes of research and reports on skills shortages in the sector. These include the Vacancy Overview 2018, produced by the Expert Group on Future Skills Needs (EGFSN), the National Skills Bulletin 2018 and Ireland's 3rd ICT Skills Action Plan (Technology Skills 2022), which was produced by the Department of Education and Skills. The Higher Diploma in Science in Computing was previously revalidated by NCI in 2015 with 5 elective specialisations in Software Development, Cloud Computing, Mobile Application Development, Computing Infrastructure and Mobile Cloud Gaming. A differential validation in 2016 included three additional specialisations in Internet of Things, Cyber Security and Software Quality & Testing. The proposed modifications to the programme in this revalidation introduce additional specialisations of Artificial Intelligence and Machine Learning, Blockchain and Web Development. Specialisations that have not proved popular are withdrawn in the proposed programme.

The Higher Diploma in Science in Computing offers an opportunity for learners with a Level 8 qualification in a non-technical discipline, and non-technical professionals to obtain an ICT

qualification in the computer science field. In preparing the programme for the current revalidation, NCI has also undertaken a review of currently advertised vacancies, and analysed the knowledge, skills and competences these outline as requirements for applicants. There is ample evidence of employment opportunities in the sector, based on the high rates of employment within 3 months for past graduates from the programme.

Comparison with existing related programmes has also been undertaken. Within Ireland, a detailed analysis has been undertaken of University College Dublin's Higher Diploma in Computer Sciences (Level 8), DIT's Higher Diploma in Computing (Level 8) and both IT Carlow and AIT's Higher Diplomas in Science in Computing (Level 8).

The panel is therefore of the view that NCI's interpretation of the Computing Awards Standards is adequately researched and informed. Moreover, the rationale for providing the programme is sound. There is a genuine and well-documented need for education and training in the discipline, and there is ample evidence of employment opportunities for graduates in the sector. Mechanisms exist for ongoing consultation with industry to keep the programme updated, including industry panels, industry partner showcases and interaction with employers due to work-placement elements of the programme.

Criterion 4

<table>
<tr><td colspan="2">The programme's access, transfer and progression arrangements are satisfactory
a)   The information about the programme as well as its procedures for access, transfer and progression are consistent with the procedures described in QQI's policy and criteria for access, transfer and progression in relation to learners for providers of further and higher education and training. Each of its programme-specific criteria is individually and explicitly satisfied.
b)   Programme information for learners is provided in plain language. This details what the programme expects of learners and what learners can expect of the programme and that there are procedures to ensure its availability in a range of accessible formats.
c)   If the programme leads to a higher education and training award and its duration is designed for native English speakers, then the level of proficiency in English language must be greater or equal to B2+ in the Common European Framework of Reference for Languages (CEFRL) in order to enable learners to reach the required standard for the QQI award.
d)   The programme specifies the learning (knowledge, skill and competence) that target learners are expected to have achieved before they are enrolled in the programme and any other assumptions about enrolled learners (programme participants).
e)   The programme includes suitable procedures and criteria for the recognition of prior learning for the purposes of access and, where appropriate, for advanced entry to the programme and for exemptions.
f)   The programme title (the title used to refer to the programme):-
    (i)   Reflects the core intended programme learning outcomes, and is consistent with the standards and purposes of the QQI awards to which it leads, the award title(s) and their class(es).
    (ii)   Is learner focused and meaningful to the learners;
    (iii)   Has long-lasting significance.
g)   The programme title is otherwise legitimate; for example, it must comply with applicable statutory, regulatory and professional body requirements.</td></tr>
<tr><td>Satisfactory (yes, no, partially)</td><td>Comment</td></tr>
<tr><td align="center">Yes</td><td></td></tr>
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Principal programme

The panel is satisfied that NCI's application meets this criterion. NCI has established procedures for access, transfer and progression within its QA, which were approved by a QQI appointed panel in 2019. The programme specific criteria and arrangements are specified in Section 4 of the programme document. These encompass NCI's policy on where information will be made available to learners about the programme prior to commencement (NCI website and prospectus; orientation and induction materials) and on registration (programme handbook; programme Moodle pages; module Moodle pages).

Entry requirements, including general and discipline specific learning, English language proficiency (CEFR B2+) and mathematical proficiency are explicitly specified in the programme documentation. Recognition of Prior Learning is assessed according to NCI's policy, and may entail a portfolio of evidence, an interview or a demonstration of technical or mathematical problem-solving skills. Non RPL applications will be accepted from potential learners who hold a Level 8 qualification or equivalent in any discipline. However, graduates from disciplines which do not require mathematical or technical problem solving skills to be embedded within programmes will be required to demonstrate these capabilities (for example, through additional certifications, experience or assessment tests). Learners completing the programme will be able to progress to a range of Level 9 Master of Science programmes offered by NCI in the computing and technology domain.

The panel is of the view that the programme title appropriately reflects the programme's MIPLOs. The title is unambiguous, will have long-lasting significance and is consistent with the purposes of the QQI awards to which it leads. Further, it is learner focused and will be meaningful to prospective or enrolled learners.

Criterion 5

The programme's written curriculum is well structured and fit-for-purpose
a) The programme is suitably structured and coherently oriented towards the achievement by learners of its intended programme learning outcomes. The programme (including any stages and modules) is integrated in all its dimensions.
b) In so far as it is feasible the programme provides choice to enrolled learners so that they may align their learning opportunities towards their individual educational and training needs.
c) Each module and stage is suitably structured and coherently oriented towards the achievement by learners of the intended *programme* learning outcomes.
d) The objectives and purposes of each of the programme's elements are clear to learners and to the provider's staff.
e) The programme is structured and scheduled realistically based on sound educational and training principles.
f) The curriculum is comprehensively and systematically documented.
g) The credit allocated to the programme is consistent with the difference between the entry standard and minimum intended programme learning outcomes.
h) The credit allocated to each module is consistent with the difference between the module entry standard and minimum intended module learning outcomes.
i) Elements such as practice placement and work based phases are provided with the same rigour and attentiveness as other elements.
j) The programme duration (expressed in terms of time from initial enrolment to completion) and its fulltime equivalent contact time (expressed in hours) are consistent with the difference between the minimum entry standard and award standard and with the credit allocation.

Satisfactory (yes, no, partially)	Comment
Yes	

Principal programme

The panel is satisfied that NCI's application meets this criterion. Prior to the site visit, the panel members had an opportunity to closely review NCI's documentation of the curriculum. Discussions during the site visit provided an opportunity for the panel members to pose questions pertaining to the programme as a whole, as well as query aspects of individual modules.

The panel discussion explored streams within the overall programme structure, including the development of programming skills across various modules and stages, the balance of theory and practice in learning activities and assessments and the potential for cross-modular assessment. The panel identified which modules were shared with programmes being concurrently revalidated, and which were unique to the Higher Diploma in Computing Science. Discussions of those programme specific modules, for indicative purposes, included:

- The differentiated structure of the *Data Structures* module when compared with its equivalent within the BSc in Computing programme, which was observed to have a more practical orientation.
- The distribution of topics in the *Object Oriented Software Engineering* module.

Criterion 6

There are sufficient qualified and capable programme staff available to implement the programme as planned

a) The specification of the programme's staffing requirements (staff required as part of the programme and intrinsic to it) is precise, and rigorous and consistent with the programme and its defined purpose. The specifications include professional and educational qualifications, licences-to-practise where applicable, experience and the staff/learner ratio requirements. See also criterion 12 c).

b) The programme has an identified complement of staff (or potential staff) who are available, qualified and capable to provide the specified programme in the context of their existing commitments.

c) The programme's complement of staff (or potential staff) (those who support learning including any employer-based personnel) are demonstrated to be competent to enable learners to achieve the intended programme learning outcomes and to assess learners' achievements as required.

d) There are arrangements for the performance of the programme's staff to be managed to ensure continuing capability to fulfil their roles and there are staff development opportunities.

e) There are arrangements for programme staff performance to be reviewed and there are mechanisms for encouraging development and for addressing underperformance.

f) Where the programme is to be provided by staff not already in post there are arrangements to ensure that the programme will not enrol learners unless a complement of staff meeting the specifications is in post.

Satisfactory (yes, no, partially)	Comment
Yes	

Principal programme

The panel is satisfied that NCI's application meets this criterion. NCI has specified programme staffing requirements in the programme documentation, and has made a commitment to ensuring that teaching staff appointed to teach on the programme have the required level of expertise and qualifications in the field on an on-going basis. Notably, NCI is a well-established provider of computing programmes, and this application pertains to the revalidation (with some modifications) of an existing programme. This means that an existing complement of qualified full-time and part-time staff are already in place. Programme documentation (Section 7.3) includes details of the programme team for Higher Diploma in Computing Science, and NCI currently has no need to recruit faculty for the programme. NCI representatives also discussed the benefit of the college's associate faculty model with the panel. This enables NCI to complement the full-time programme staff profiles with associate faculty, many of whom have had a long-term association with the college. These individuals typically maintain profiles in industry, bringing currency of perspective into the college.

Quality assurance processes are in place for managing the performance of teaching staff at NCI. A number of measures inform the ongoing monitoring of staff performance, including meetings of class representatives with programme directors, anonymously completed module surveys and the student complaints policy. Further, NCI actively supports the professional development of its faculty through a programme of workshops, seminars and accredited learning options. An illustrative calendar of workshops conducted in the 2018/2019 academic year was included in the programme documentation. Topics were practically oriented and spanned areas of practice including use of educational technologies, assessment, reflective practice and general teacher development. During the site visit, NCI confirmed that the college also offers supports for faculty maintaining currency in their disciplines through conference attendance, publication and associated activities or through PhD studies.

Criterion 7

There are sufficient physical resources to implement the programme as planned
a) The specification of the programme's physical resource requirements (physical resources required as part of the programme and intrinsic to it) is precise, and rigorous and consistent with the programme, its defined purpose and its resource/learner-ratio requirements. See also criterion 12 d).
b) The programme has an identified complement of supported physical resources (or potential supported physical resources) that are available in the context of existing commitments on these e.g. availability of:
(i) suitable premises and accommodation for the learning and human needs (comfort, safety, health, wellbeing) of learners (this applies to all of the programme's learning environments including the workplace learning environment)
(ii) suitable information technology and resources (including educational technology and any virtual learning environments provided)
(iii) printed and electronic material (including software) for teaching, learning and assessment
(iv) suitable specialist equipment (e.g. kitchen, laboratory, workshop, studio) – if applicable
(v) technical support
(vi) administrative support
(vii) company placements/internships – if applicable
c) If versions of the programme are provided in parallel at more than one location each independently meets the location-sensitive validation criteria for each location (for example staffing, resources and the learning environment).
d) There is a five-year plan for the programme. It should address
(i) Planned intake (first five years) and
(ii) The total costs and income over the five years based on the planned intake.
e) The programme includes controls to ensure entitlement to use the property (including intellectual property, premises, materials and equipment) required.

Satisfactory (yes, no, partially)	Comment
Yes	

Principal programme

The panel is satisfied that NCI's application meets this criterion. NCI has clearly specified the programme's physical resource requirements in Section 7 of the programme document. This includes software tools, cloud resources and administrative support provided by a dedicated Programme Coordinator. The programme will be offered at NCI's campus, located within the International Financial Services Centre (IFSC) of Dublin. As the programme proposed is a revalidation, the required learning spaces (inclusive of traditional classrooms, studios and collaborative learning spaces) are in existence, and funds have been committed to additional refurbishment in 2020 to augment these. Learners at NCI also have access to recreation and dining facilities, and personal study spaces.

Criterion 8

The learning environment is consistent with the needs of the programme's learners	
a) The programme's physical, social, cultural and intellectual environment (recognising that the environment may, for example, be partly virtual or involve the workplace) including resources and support systems are consistent with the intended programme learning outcomes. b) Learners can interact with, and are supported by, others in the programme's learning environments including peer learners, teachers, and where applicable supervisors, practitioners and mentors. c) The programme includes arrangements to ensure that the parts of the programme that occur in the workplace are subject to the same rigours as any other part of the programme while having regard to the different nature of the workplace.	
Satisfactory (yes, no, partially)	**Comment**
Yes	

Principal programme

NCI learners can avail of well-equipped learning and recreation facilities at the IFSC campus, and access a range of support services. These include a disability support service, through which any learner at NCI can register to have an educational needs assessment and receive dedicated learning support. Counselling services are available free to full-time students, and are subsidised for part-time students. NCI's international office provides additional support sessions targeted at the specific needs of the international cohort (e.g. orientation to personal safety in Ireland, where to shop, access medical services or contact the Gardaí).

Academic support that is both programme and module specific is offered via NCI's Computing Support Team. This service delivers workshops timed to align to the curriculum, and also provides individual and online support to learners. During the site visit, the panel had the opportunity to interact with learners at NCI in the early and late stages of the current programme, and also with recent graduates. Although these learners indicated changes they would like to see within the written curriculum, they were unanimous in praising the support provided to them by the teaching and support staff at NCI, and reflected positively on the learning environment.

N.B. As there is no work-based learning component in the programme, sub criterion c) is not applicable here.

Criterion 9

There are sound teaching and learning strategies	
a) The teaching strategies support achievement of the intended programme/module learning outcomes. b) The programme provides authentic learning opportunities to enable learners to achieve the intended programme learning outcomes. c) The programme enables enrolled learners to attain (if reasonably diligent) the minimum intended programme learning outcomes reliably and efficiently (in terms of overall learner effort and a reasonably balanced workload). **d)** Learning is monitored/supervised. **e)** Individualised guidance, support and timely formative feedback is regularly provided to enrolled learners as they progress within the programme.	
Satisfactory (yes, no, partially)	**Comment**
Yes	

Principal programme

The panel is satisfied that NCI's application meets this criterion. All NCI programmes are underpinned by the three pillars of the institution's Learning, Teaching and Assessment strategy (developing the learner experience, developing the learning curriculum and developing the learning community). These dimensions are interpreted specifically to the programme within the programme documentation.

The programme delivery incorporates a range of learning, teaching and assessment strategies. These are specified for individual modules within the programme documentation, and are appropriately aligned to achievement of the MIPLOs and MIMLOs. Across the programme, learners will experience a range of teaching modalities including direct instruction, in-class group work, interactive workshops, guest speakers, practical laboratory exercises and discussions. In addition to in-class learning and teaching activities, learners will be able to access a range of supplementary learning materials, such as video resources, on Moodle. A diversity of contemporary approaches to learning and teaching, for example, the Flipped Classroom, Blended Learning and Problem-based learning are also utilised to achieve the objectives of different modules.

Criterion 10

There are sound assessment strategies	
a) All assessment is undertaken consistently with *Assessment Guidelines, Conventions and Protocols for Programmes Leading to QQI Awards*	
b) The programme's assessment procedures interface effectively with the provider's QQI approved quality assurance procedures.	
c) The programme includes specific procedures that are fair and consistent for the assessment of enrolled learners to ensure the minimum intended programme/module learning outcomes are acquired by all who successfully complete the programme.	
d) The programme includes formative assessment to support learning.	
e) There is a satisfactory written **programme assessment strategy** for the programme as a whole and there are satisfactory module assessment strategies for any of its constituent modules.	
f) Sample assessment instruments, tasks, marking schemes and related evidence have been provided for each award-stage assessment and indicate that the assessment is likely to be valid and reliable.	
g) There are sound procedures for the moderation of summative assessment results.	
h) The provider only puts forward an enrolled learner for certification for a particular award for which a programme has been validated if they have been specifically assessed against the standard for that award.	
Satisfactory (yes, no, partially)	**Comment**
Yes	

Principal programme

The panel is satisfied that NCI's application meets this criterion. NCI's programme documentation includes a programme assessment strategy and a schedule of formative and summative assessment. The panel also reviewed the assessment strategies for individual modules contained within the module documentation. Assessment methods are under continuous review by the programme team, and are renewed as necessary.

NCI has processes in place to ensure fair and consistent assessment of enrolled learners within its institutional QA, and the programme's assessment strategy interfaces with those. During the panel's site visit, NCI representatives responded to queries from the panel regarding the relative percentages of Continuous Assessment within modules, the timing of assessments across modules and the management of instances of plagiarism. Following this discussion, the panel was satisfied that the programme team take a proactive approach to scheduling assessment to avoid overloading learners, and monitoring the effectiveness of assessment tasks on an ongoing basis.

Criterion 11

Learners enrolled on the programme are well informed, guided and cared for
a) There are arrangements to ensure that each enrolled learner is fully informed in a timely manner about the programme including the schedule of activities and assessments.
b) Information is provided about learner supports that are available to learners enrolled on the programme.
c) Specific information is provided to learners enrolled on the programme about any programme-specific appeals and complaints procedures.
d) If the programme is modular, it includes arrangements for the provision of effective guidance services for learners on the selection of appropriate learning pathways.
e) The programme takes into account and accommodates to the differences between enrolled learners, for example, in terms of their prior learning, maturity, and capabilities.
f) There are arrangements to ensure that learners enrolled on the programme are supervised and individualised support and due care is targeted at those who need it.
g) The programme provides supports for enrolled learners who have special education and training needs.
h) The programme makes reasonable accommodations for learners with disabilities.
i) If the programme aims to enrol international students it complies with the *Code of Practice for Provision of Programmes to International Students* and there are appropriate in-service supports in areas such as English language, learning skills, information technology skills and such like, to address the particular needs of international learners and enable such learners to successfully participate in the programme.
j) The programme's learners will be well cared for and safe while participating in the programme, (e.g. while at the provider's premises or those of any collaborators involved in provision, the programme's locations of provision including any workplace locations or practice-placement locations).

Satisfactory (yes, no, partially)	Comment
Yes	

Principal programme

The panel is satisfied that NCI's application meets this criterion. At the outset of their studies, new learners at NCI are provided with an orientation. This can be undertaken on campus or online for learners who are part-time or participating in a blended programme. In discussion at the site visit, NCI representatives indicated that during the on campus orientation, emphasis is placed on both settling learners socially through icebreaking activities and signposting available services. As the information provided during orientation is also available online, all learners have ongoing self-service access to information about resources and supports via Moodle. Information pertaining to procedures for appeals and complaints is provided in the programme handbook and online in the school Moodle page. Additionally, information is provided to learners via the student handbook.

NCI has a range of learner support services in place, which support the diversity of needs and preferences among its different cohorts. Academic supports are available through workshops and on a 1-1 basis as required, including programme specific support. These include learning support, mathematics support and computing support services. Importantly, learners who are unable to access those supports on campus can do so online. A disability support service is in place, and learners can utilise this to have their educational needs assessed and to be supported in negotiating reasonable accommodations as well as other learning supports. Careers support services are available to assist learners in locating appropriate work placements and preparing for employment, and an international office provides targeted supports to enrolled learners who are living abroad from their countries of origin while studying at NCI.

During the site visit, current learners at NCI and recent graduates spoke to the panel about their experiences at the college. They reflected positively on their experiences at NCI, and spoke highly of the college's staff. It was evident that they felt supported within the college environment.

Consequently, the panel is of the view that learners at NCI will be well-informed in a timely manner, and also cared for and guided during their studies.

Criterion 12

The programme is well managed
a) The programme includes intrinsic governance, quality assurance, learner assessment, and access, transfer and progression procedures that functionally interface with the provider's general or institutional procedures. b) The programme interfaces effectively with the provider's QQI approved quality assurance procedures. Any proposed incremental changes to the provider's QA procedures required by the programme or programme-specific QA procedures have been developed having regard to QQI's statutory QA guidelines. If the QA procedures allow the provider to approve the centres within the provider that may provide the programme, the procedures and criteria for this should be fit-for-the-purpose of identifying which centres are suited to provide the programme and which are not. c) There are explicit and suitable programme-specific criteria for selecting persons who meet the programme's staffing requirements and can be added to the programme's complement of staff. d) There are explicit and suitable programme-specific criteria for selecting physical resources that meet the programmes physical resource requirements, and can be added to the programme's complement of supported physical resources. e) Quality assurance is intrinsic to the programme's maintenance arrangements and addresses all aspects highlighted by the validation criteria. f) The programme-specific quality assurance arrangements are consistent with QQI's statutory QA guidelines and use continually monitored completion rates and other sources of information that may provide insight into the quality and standards achieved. g) The programme operation and management arrangements are coherently documented and suitable. h) There are sound procedures for interface with QQI certification.

Satisfactory (yes, no, partially)	Comment
Yes	

Principal programme

The panel is satisfied that the provider's application meets this criterion. NCI has an established governance structure and recently approved institutional quality assurance procedures in place. The management structure and procedures outlined for the proposed programme interface effectively with these. NCI's programme documentation also includes programme-specific criteria pertaining to staffing and physical resources. The panel is therefore of the view that the programme's operation and management arrangements are appropriate. Finally, NCI is an established provider and has a track record of interacting successfully with QQI to validate programmes of education and training and certify learners.

Overall recommendation to QQI

Principal programme

Select one	
X	Satisfactory (meaning that it recommends that QQI can be satisfied in the context of unit 2.3) of Core policies and criteria for the validation by QQI of programmes of education and training;
	Satisfactory subject to proposed special conditions (specified with timescale for compliance for each condition; these may include proposed pre-validation conditions i.e. proposed (**minor**) things to be done to a programme that almost fully meets the validation criteria before QQI makes a determination);
	Not satisfactory.

Reasons for the overall recommendation

During the site visit the panel explored the programme teams' rationales for a number of specific decisions that had been made in relation to the programme proposed for revalidation. It was evident to the panel that the team at NCI engage in processes of internal reflection and critique that are conducive to continuous improvement and this to be commended.

The panel offers a further commendation to NCI on its well-developed and holistic learner support systems. NCI has a well-considered orientation process for new students. This avoids overloading them with information, and incorporates a set of online self-access resources for learners who cannot attend in person. The learners the panel engaged with during the site visit clearly felt well-supported by the staff and systems in place at the College.

The panel would like to highlight the important role the computing support team plays in delivering comprehensive support. This support is available in multiple formats, including workshops that are timed to align to the curriculum, online and 1-1. Given the diversity of NCI's target cohorts, this is clearly an important resource for learners, and highly commendable.

Notably, NCI has taken some steps to address the gender imbalance of the cohorts in its computing programmes. The College is encouraged to continue its efforts in this regard.

Summary of recommended special conditions of validation

There are no recommended special conditions of validation.

Summary of recommendations to the provider

There are no additional recommendations in relation to this programme.

Declarations of Evaluators' Interests

No interests have been declared by members of the revalidation panel that would affect the impartiality of the panel and its ability to make a recommendation to QQI regarding the revalidation of the primary programme.

This report has been agreed by the evaluation panel and is signed on their behalf by the chairperson.

Panel chairperson: Danny Brennan   Date: 23rd April 2020

Signed:
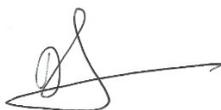
Disclaimer

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Part 3: Proposed programme schedule

Name of Provider:	National College of Ireland
Programme Title	Higher Diploma in Science in Computing
Award Title	Higher Diploma in Science in Computing
Stage Exit Award Title[3]	N/A
Modes of Delivery (FT/PT):	Full-Time, Part-time, Online and Blended
Teaching and learning modalities	Direct contact via lectures and demonstrations, Online Learning

Award Class[4]	Award NFQ level	Award EQF Level	Stage (1, 2, 3, 4, …, or Award Stage):	Stage NFQ Level[2]	Stage EQF Level[2]	Stage Credit (ECTS)	Date Effective	ISCED Subject code
Major	8	6	Award Stage	8	6	60	Sept 2020	0613

Module Title (Up to 70 characters including spaces)	Semester no where applicable. (Semester 1 or Semester2)	Module Status	NFQ Level[1] where specified	Credit Number [5] Credit Units ECTS	Total Hours	Class (or equiv) Contact Hours	Directed e-learning	Hours of Independent Learning	Work-based learning effort	C.A. %	Supervised Project %	Proctored practical demonstration %	Proctored written exam %
Software Development	1	M	8	10	250	48		202		50		50	
Object Oriented Software Engineering	1	M	8	5	125	36		89		100			
Introduction to Databases	1	M	8	5	125	36		89		40			60
Web Design and Client Side Scripting	1	M	8	5	125	36		89		100			
Computer Architecture Operating Systems and Networks	2	M	8	5	125	36		89		50			50
Data Structures	2	GE1	8	10	250	60		190		50			50
Algorithms and Advanced Programming	2	GE1	8	5	125	48		77		50			50
Distributed Systems	2	GE1; GE6	8	5	125	36		89		60			40
Cloud Application Development	2	GE2; GE7	8	10	250	60		190		100			
Edge and Fog Computing	2	GE2	8	5	125	48		77		40			60
DevOpsSec	2	GE2;	8	5	125	36		89		100			

Name of Provider:	National College of Ireland
Programme Title	**Higher Diploma in Science in Computing**
Award Title	Higher Diploma in Science in Computing
Stage Exit Award Title³	**N/A**
Modes of Delivery (FT/PT):	**Full-Time, Part-time, Online and Blended**
Teaching and learning modalities	Direct contact via lectures and demonstrations, Online Learning

Award Class⁴	Award NFQ level	Award EQF Level	Stage (1, 2, 3, 4, …, or Award Stage):	Stage NFQ Level²	Stage EQF Level²	Stage Credit (ECTS)	Date Effective	ISCED Subject code
Major	**8**	**6**	**Award Stage**	**8**	**6**	**60**	**Sept 2020**	**0613**

Module Title (Up to 70 characters including spaces)	Semester no where applicable. (Semester 1 or Semester2)	Module Status	NFQ Level¹ where specified	Credit Units ECTS	Total Hours	Class (or equiv) Contact Hours	Directed e-learning	Hours of Independent Learning	Work-based learning effort	C.A. %	Supervised Project %	Proctored practical demonstration %	Proctored written exam %
		GE7											
IoT Fundamentals and Development	2	GE3	8	10	250	60		190		40			60
IoT Application Development	2	GE3	8	5	125	48		77		100			
Fundamentals of Mobile Communication	2	GE3	8	5	125	36		89		40			60
Security Principles and Secure Programming	2	GE4	8	10	250	60		190		50			50
Network and Web Penetration Testing	2	GE4	8	5	125	48		77		50			50
Digital Foresnsics	2	GE4	8	5	125	36		89		50			50
Artificial Intelligence	2	GE5	8	10	250	60		190		40			60
Machine Learning Fundamentals	2	GE5	8	5	125	48		77		60			40
Statistics	2	GE5	8	5	125	36		89		50			50
Blockchain Foundations	2	GE6	8	10	250	60		190		40			60
Blockchain Application Development	2	GE6	8	5	125	48		77		50			50
Advanced Client Side Development	2	GE7	8	5	125	48		77		100			

Name of Provider:	National College of Ireland
Programme Title	**Higher Diploma in Science in Computing**
Award Title	Higher Diploma in Science in Computing
Stage Exit Award Title[3]	**N/A**
Modes of Delivery (FT/PT):	**Full-Time, Part-time, Online and Blended**
Teaching and learning modalities	Direct contact via lectures and demonstrations, Online Learning

Award Class[4]	Award NFQ level	Award EQF Level	Stage (1, 2, 3, 4, …, or Award Stage):	Stage NFQ Level[2]	Stage EQF Level[2]	Stage Credit (ECTS)	Date Effective	ISCED Subject code
Major	8	6	Award Stage	8	6	60	Sept 2020	0613

Module Title (Up to 70 characters including spaces)	Semester no where applicable. (Semester 1 or Semester2)	Module			Credit Number [5]		Total Student Effort Module (hours)						Allocation Of Marks (from the module assessment strategy)				
		Status	NFQ Level[1] where specified	Credit Units / ECTS		Total Hours	Class (or equiv) Contact Hours	Directed e-learning	Hours of Independent Learning	Work-based learning effort		C.A. %	Supervised Project %	Proctored practical demonstration %	Proctored written exam %	
Domain Skills for Computing	2	E	8	0		125	36		89			100				
Project	3	M	8	10		250	48		202			100				

Special Regulations: Students must choose a Group Elective (i.e. either GE1, GE2, GE3, GE4, GE5, GE6 or GE7). The Domain Skills for Computing module is an elective non-credit bearing module that is available to all streams/specialisations.
Group Elective 1 – Software Development (Modules: Data Structures, Algorithms and Advanced Programming, and Distributed Systems) OR
Group Elective 2 – Cloud Computing (Modules: Cloud Application Development, Edge and Fog Computing, and DevOpsSec) OR
Group Elective 3 – Internet of Things (Modules: IoT Fundamentals and Development, IoT Application Development, and Fundamentals of Mobile Communication) OR
Group Elective 4 – Cyber Security (Modules: Security Principles and Secure Programming, Network and Web Penetration Testing, and Digital Forensics) OR
Group Elective 5 – AI/ML (Modules: Artificial Intelligence, Machine Learning Fundamentals, and Statistics) OR
Group Elective 6 – Blockchain (Modules: Blockchain Foundations, Blockchain Application Development, and Distributed Systems) OR
Group Elective 7 – Web Development (Modules: Cloud Application Development, Advanced Client Side Development, and DevOpsSec)