QQI
Quality and Qualifications Ireland
Dearbhú Cáilíochta agus Cáilíochtaí Éireann

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

Part 1 A

Provider name	National College of Ireland
Date of site visit	14th – 15th February 2019
Date of report	17th April 2019
Is this a re-validation report (Yes/No)	No

Overall recommendations

Principal programme	**Title**	Higher Certificate in Science in Data Science
	Award	Higher Certificate in Science (Level 6)
	Credit[1]	120
	Recommendation *Satisfactory OR Satisfactory subject to proposed conditions*[2] *OR Not Satisfactory*	Satisfactory subject to recommended special conditions

[1] Specify the credit units because more than one system of units is in use. E.g. 20 (ECTS).
[2] Normally an application that fails to meet the criteria in any of its aspects will be considered as not satisfactory. Nevertheless, so as to ensure that the validation process will not be implemented unreasonably, if an independent evaluation finds that a programme virtually meets the validation criteria but needs some minor modifications, the independent evaluation could conclude "Satisfactory subject to recommended special conditions" where the special conditions prescribe the defects that require to be corrected.

Further, in exceptional cases the 'special conditions' may be used to identify parts of the application that are considered satisfactory on a stand-alone basis. For example, an application might propose a programme to be provided at two locations but the independent evaluation report may find the application satisfactory on condition that it be provided only at one specified location and not at the other. These conditions will not however be used to recommend that QQI can be satisfied with a programme conditional on a different QQI award (e.g. at a lower NFQ level or having a different CAS award title) being sought than the one identified in the application.

Evaluators

Evaluators		
Name	**Role**	**Principal occupation**
Dr Áine Ní Shé	Chair	Registrar & Vice President (Acting), Cork IT
Dr Dermot Douglas	Recording Secretary	Higher Education Consultant Former Director of Academic Affairs IOTI (now THEA)
Dr Matteo Magnani	Subject Expert	Senior Lecturer (lektor), Dept of Computer Science, Uppsala University, Sweden.
Prof Vasilis Argyriou	Subject Expert	Professor , School of Computer Science and Mathematics , Kingston University, London
Dr Fiona Boland	Subject Expert	Lecturer Biostatistics & Research Methods, Data Science Centre, RCSI, Dublin
Clara Killeen	Learner	BSc Hons Financial Mathematics and Actuarial Science graduate and current MSc Data Analytics learner at UCC
Dr Claire Jordan	Employer/Sectoral Expert	Senior Analytics Consultant, Presidion

Part 1 B

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	80	15

Enrolment interval ***(normally 5 years)***	**Date of first intake**	September 2019
	Date of last intake	September 2023
Maximum number of annual intakes	2 (1 full-time; 1 part-time)	
Maximum total number of learners per intake (over all centres)	80	
Programme duration (months from start to completion)	24	
Target learner groups	The Higher Certificate in Science in Data Science is aimed at full time and part time learners. There are a number of different categories of potential learners that have been identified as suitable candidates for this course: • Learners who have their Leaving Certificate complete and who seek an introduction to Data Science with a view to pursuing a career or further education in the field. • Learners who are currently working in IT or science sectors and don't have the relevant academic experience and are looking for a progression path in their current working environment or are looking to up-skill and move to a new job in Data Science. The award may also serve as an exit award for those learners who successfully complete stages 1 and 2 of the BSc Honours in Data Science who opt to leave the degree prior to completing the full programme.	
Approved countries for provision	Republic of Ireland	
Delivery mode: Full-time/Part-time	Full-time and part-time	
The teaching and learning modalities	Blended learning combining different strategies, including traditional classroom lectures, tutorials and seminars, flipped classroom, problem and project-based learning, team work and work-based learning. Synchronous Online delivery may also be used in some cases.	
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 2-year Higher Certificate in Science degree aimed at Leaving Certificate graduates or mature applicants who wish to follow a career in data science. The programme will run both on part-time and full-time basis 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 2 stages taking modules that cover topics such as Mathematics, Statistics, Programming, Problem Solving, Computing Systems, Databases, Data Visualisation & Machine Learning. The programme leads to a level 6 Higher Certificate in Science in Data Science awarded by QQI. Graduates of this programme may pursue further education or employment in the mining, modelling, management, analysis and visualisation of data.	
Summary of specifications for teaching staff	WTE	Qualifications and experience
	4	Lecturers with a Masters or PhD level qualification in computing or a related discipline with academic experience delivering modules in ICT, Maths and Statistics, Programming, and Data Analytics at Level 8.
	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	**Lectures**	**Tutorials/Labs**
	100	25
Overall WTE staff/learner ratio.[3]	6:160	

Programmes being replaced by the [principal programme]

Programmes being replaced (applicable to applications for revalidation)			**Arrangement for enrolled learners**	**Date when replaced programme is planned to cease completely**
Code	**Title**	**Last enrolment date**	**Indicate whether "Teach out" or "Transfer to replacement programme"**	
	Not Applicable			

[3] This is the total wholetime equivalent number of staff dedicated exclusively to this programme divided by the maximum number of learners that can be enrolled with that complement of staff.

Other noteworthy features of the application

The evaluation panel wishes to commend the programme team and NCI for the high quality of the documentation provided and the comprehensive suite of supporting appendices, handbooks, and policy documents.

Part 1C Evaluation of the Case for an Extension of the Approved Scope of Provision (where applicable).

Comment on the case for extending the applicant's Approved Scope of Provision to enable provision of this programme.

Not Applicable

Part 2A 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.[4]	
Satisfactory (yes, no, partially)	**Comment**
Yes	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 1 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion.

[4] This criterion is to ensure the programme can actually be provided and will not be halted on account of breach of the law. The declaration is sought to ensure this is not overlooked but QQI is not responsible for verifying this declaration of enforcing such 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.[5]
    (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.[6]

Satisfactory (yes, no, partially)	**Comment**
Yes	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 2 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion.

The panel notes that

1. Clear aims and objectives are stated
2. The QQI award being sought is clearly stated
3. The rationale for the choice of this award is clear and valid
4. The award title is consistent with QQI's Policy and Criteria and is legitimate
5. The programme title is consistent with the Award being sought
6. Realistic minimum programme and module learning outcomes are stated and are clear and concise.

[5] Other programme objectives, for example, may be to meet the educational or training requirements of a statutory, regulatory or professional body.
[6] Not all modules will warrant minor awards. Minor awards feature strongly in the QQI common awards system however further education and training awards may be made outside this system.

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.[7]

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[8] of learner demand for the programme.
   (v) There is evidence of employment opportunities for graduates where relevant[9].
   (vi) The programme meets genuine education and training needs.[10]

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	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 3 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion

The panel notes that

1. The programme development team consulted widely with stakeholders, but particularly with Education and Training Boards and Further Education and Training colleges, when designing the programme. However, the research with industrial stakeholders was generic and the same data applied, with some minor editing, to the suite of five programmes submitted for validation at the same time. While it is clear that there is a general need for data scientists/technicians qualified to different levels, there is little supporting information

[7] Awards standards however detailed rely on various communities for their interpretation. This consultation is necessary if the programme is to enable learners to achieve the standard in its fullest sense.
[8] This might be predictive or indirect.
[9] It is essential to involve employers in the programme development and review process when the programme is vocationally or professionally oriented.
[10] There is clear evidence that the programme meets the **target learners'** education and training needs and that there is a clear demand for the programme.

in the document supporting a demand for this specific qualification. Its main utility in employment appears to be for those already in jobs who wish to up-skill or re-skill. Appropriate documentation was provided to the panel and details of the consultation process were elaborated during the panel visit.

2. The panel was provided with extensive documentation to demonstrate that the programme attained the appropriate level on the National Framework of Qualifications and that it met the appropriate QQI standard for the award. The programme development team suggested that the cross-disciplinary nature of the programme required them to meet both the Computing Standard and the Science Standard.
3. The programme development team note that there are no comparable programmes in Ireland and instead compared the content with the first two years of Honours Degree programmes in other higher education institutions. While this may show that the content is comparable, the programme learning outcomes must still constitute a coherence that supports the granting of an award. The matching of the MIPLOs to the award standards at Level 6 is comprehensive and supports the case for a Higher Certificate.
4. Implementation of the programme will require attention be given to entrants who have the minimum level of mathematics competency on admission and to the mathematics knowledge, skill and competence of non-standard applicants. This latter point is addressed on page 11.
5. From the evidence provided to the panel, it is clear that there is both a role and a need for this type of graduate and employment opportunities exist.

Criterion 4

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[11].

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[12]) 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).

[11] Each of the detailed criteria set out in the Policy and criteria for access, transfer and progression in relation to learners for providers of further and higher education and training must be addressed in the provider's evaluation report. The detailed criteria are (QQI, restated 2015) arranged under the headings

- Progression and transfer routes
- Entry arrangements
- Information provision

[12] http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf (accessed 26/09/2015)

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.

Satisfactory (yes, no, partially)	**Comment**
Yes	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 4 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion

The panel notes that

1. A minimum entry requirement of H5 must be obtained in mathematics. This is somewhat higher than that of Higher Certificates, in general, in Ireland. The panel accepts that the programme development team has addressed this issue adequately and that this is the minimum standard that would be required for learners to cope with the mathematical aspects of the programme. The panel has some concerns about the Statistics module in first year. This will be addressed in the next section and when dealing with the individual modules.
2. The panel noted that NCI had entered into an arrangement with Rathmines Further Education College to facilitate advanced entry into year two and that this involved the two institutions working on the mathematics of the QQI Level 6 programme in Software Development – 6M0691.
3. Evidence was not provided of comparable mathematical ability to a Leaving Certificate H5 or above in support of NCI's intention to admit learners who have 'completed a Level 5 or Level 6 programme in Computer Science/Data Science or cognate area from a Further Education and Training Institute (FET) or similar. It is possible that graduates from such programmes would have insufficient mathematics formation to support them on this programme. The panel proposes as a **special condition of validation** that NCI ensures that all applicants from FET or equivalent institutions be required to provide proof of mathematical ability comparable to Leaving Certificate H5 in order to be admitted.
4. In Semester 2 of year two, learners are offered a choice between two electives – Data Analysis Project and Programming 3. This choice is not available in the second year of the BSc (Ordinary) or the BSc (Honours). **It is recommended that** NCI ensures that learners wishing to progress to year 3 of either of these degrees are not disadvantaged by not having the required level of programming to sustain them through the next qualification level.

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[13]. 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.[14]	
Satisfactory (yes, no, partially)	**Comment**
Yes	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 5 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion

The panel notes that

1. The modules are well documented, and show wide coverage of core material. **It is recommended that**, the programme development team review the workload that will apply to the part-time version of the programme with a view to addressing the issues outline below.
   The part-time option reduces term workload from 30 to 20 credits by adding an extra period of teaching and study during the summer, and over a 10 week period rather than the twelve weeks available to full-time students. This will result in a difficult and intense module. Additionally, full-time learners have class contact for all but one of their modules (Data Architecture) which also has 18 hours of directed learning. In contrast, the part-time mode relies heavily on directed learning (some 25% of the modules). While this reduces the need to travel to the NCI campus, it remains unclear whether these learners will receive the same level of support from the College as their colleagues following the same programme full-time. This is particularly concerning with the Statistics 1 module being delivered by directed learning in the third (summer) period of year 1. It is questionable how this strategy meets the learners' needs. **Special conditions of validation**, which the panel proposes to make to

[13] This applies recursively to each and every element of the programme from enrolment through to completion.
In the case of a modular programme, the pool of modules and learning pathway constraints (such as any prerequisite and co-requisite modules) is explicit and appropriate to the intended programme learning outcomes.
[14] If the duration is variable, for example, when advanced entry is available, this should be explained and justified

QQI in relation to the Statistics 1 module (p. 34), will necessitate a change to the part-time mode, as well as the full-time mode.

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[15] (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[16] opportunities[17].
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	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 6 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion

The panel notes that

1. The overall WTE ratio of staff to learners is appropriate and in line with what pertains in other higher education colleges.

[15] Staff here means natural persons required as part of the programme and accountable (directly or indirectly) to the programme's provider, it may for example, include contracted trainers and workplace supervisors.
[16] Development here is for the purpose of ensuring staff remain up-to-date on the discipline itself, on teaching methods or on other relevant skills or knowledge, to the extent that this is necessary to ensure an adequate standard of teaching.
[17] Professional or vocational education and training requires that teaching staff's professional/vocation knowledge is up to date. Being qualified in a discipline does not necessarily mean that a person is currently competent in that discipline. Therefore, performance management and development of professional and vocational staff needs to focus on professional/vocational competence as well as pedagogical competence. Professional development may include placement in industry, for example. In regulated professions it would be expected that there are a suitable number of registered practitioners involved.

2. Staff qualifications and experience, while lacking detail in some instances in the documentation, is at an appropriate level for these programmes.
3. The panel was informed that the faculty had received sanction for 6 new staff members, three of these specifically for Data Science – one at Associate Professor level. **The panel recommend** that the faculty seriously considers that one of these new hires should be a specialist in Statistics, rather than a Computer Scientist or Data Scientist with knowledge of statistics.
4. There was a general lack of detail about staff development opportunities in the documentation. The submission, on page 201, concentrated on performance management with the first paragraph simply stating that the staff is "*encouraged to develop*", and "*mechanisms are in place to help staff … reach their full potential*", as well as reference to the college providing annual Learning and Teaching workshops. It is unclear how lecturers who will be involved in these programmes are encouraged to develop, what mechanisms are in place to facilitate them and what is the level of participation by staff in workshops and other pedagogical development initiatives. The extracts from the NCI QA handbook does not contain any information on staff development. **It is recommended** that this should be addressed in the revised submission document.

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	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 7 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion

The panel notes that

1. The programme relies on existing resources that are also available to other programmes. The sample list of IT resources provides examples of software used throughout the programmes offered by the College. **It is recommended that** a list of software and computing resources more specific for Data Science should be presented to demonstrate the readiness of the programme given the fact that the College acknowledges the fact that big data, for example, is not manageable with traditional systems. This was also identified as an issue in the internal review report.
2. The existence of a Cloud Competency Centre is noted by the panel as a very positive development in the College.

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	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 8 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion

The panel notes that

The description of the learning environment focuses on existing resources. There is no information on anticipated resource needs over a five year validation period or the pressure that will be placed on existing resources as the number of both students and programmes increase.

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[18] and timely formative feedback is regularly provided to enrolled learners as they progress within the programme.	
Satisfactory (yes, no, partially)	**Comment**
Yes	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 9 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion

The panel notes that

1. The approach adopted is learner centred and provides opportunities for learners to achieve the IPLOs.
2. **It is recommended that** the programme team review the balance of workload for part-time learners to ensure that it is realistic and reasonable; and at each stage of the programme is not so onerous as to compromise learners achieving the requisite learning outcomes.

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***[19] 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.[20] d) The programme includes formative assessment to support learning.

[18] Support and feedback concerns anything material to learning in the context of the programme. For the avoidance of doubt it includes among other things any course-related language, literacy and numeracy support.
[19] See the section on transitional arrangements.
[20] This assumes the minimum intended programme/module learning outcomes are consistent with the applicable awards standards.

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.[21] 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.[22]	
Satisfactory (yes, no, partially)	**Comment**
Yes	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 10 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion

The panel notes that

1. The overall assessment strategy is documented in Section 5.6. Assessment modalities are given for individual modules along with the module descriptors but the basis for the choice made is not described (e.g. assessment strategy – Project 100%). The assessment of modules needs to be more granular to include why particular modalities were adopted and the elements of each assessment method that will be marked. This is necessary in the interest of transparency and to underpin the fairness, validity, reliability and consistency of the assessment instruments used.
2. There is a constructive alignment between the modules' Learning outcomes and assessment. In turn, MIMLOS align back to MIPLOS.
3. It is important in the assessment strategy of each module to make it clear why the same learning outcome may be assessed several times. The QQI Document '*Assessment and Standards (Revised 2013*) on page 12 warns of the danger thus "*contradictory assessment findings can emerge when the same learning outcomes are assessed by continuous assessment and written examinations. This can create dilemmas unless the potential for such contradictions is foreseen and provided for in the programme and module assessment strategies*". It is clear in the documentation received by the panel that the same learning outcomes are assessed several times in a number of modules. It needs to be made clear in the module learning strategies why the same learning outcome is being assessed more than once. For example CA covers theory, comprehension and knowledge, while project covers the practical application of these domains; OR assessments cover different and specific elements of a learning outcome. **It is recommended that** the module assessment strategies, in the interest of transparency, fairness and consistency explain why individual learning outcomes are assessed more than once.
4. Samples of assessment are provided (Appendix 4).
5. Moderation procedures include 2nd marking, standardisation and external examining.

[21] The programme assessment strategy is addressed in the Assessment Guidelines, Conventions and Protocols for Programmes Leading to QQI Awards. See the section on transitional arrangements.
[22] If the award is a QQI CAS compound award it is not necessarily sufficient that the learner has achieved all the components specified in the certification requirements unless at least one of those components is a capstone component (i.e. designed to test the compound learning outcomes).

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[23].
i) If the programme aims to enrol international students it complies with the *Code of Practice for Provision of Programmes to International Students*[24] 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	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 11 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion

[23] For more information on making reasonable accommodations see www.AHEAD.ie and QQI's Policies, Actions and Procedures for Access, Transfer and Progression for Learners (QQI, restated 2015).
[24] See Code of Practice for Provision of Programmes to International Students (QQI, 2015)

The panel notes that

1. The College has collaborated with the Education and Training Boards and with Rathmines Further Education College to provide a pathway for students studying on the QQI Level 6 Advanced Certificate programme in Software Development – 6M0691 with a*n advanced entry pathway into the second year of this programme.* This initiative is both positive and welcome. NCI plans to extend this level of collaboration to other FE providers in the future.

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[25] 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	*Higher Certificate in Science in Data Science*

The panel has evaluated the programme having regard to criterion 12 and its sub-criteria and recommends that QQI can be satisfied that the programme meets this criterion

[25] See also QQI's Policy on Monitoring (QQI, 2014)

The panel notes that

1. The Programme is governed, managed and provided under academic governance and quality assurance policies and procedures approved by QQI under the Qualifications and Quality Assurance (Education and Training) Act 2012.
2. The programme development team has identified criteria for the selection and appointment of new staff on this programme and currently has a complement of staff who are qualified and experienced to teach on it. The programme development team have assessed the physical resources necessary to provide the programme and are satisfied that they are all currently available.
3. The programme specific quality assurance arrangements are consistent with QQIs statutory guidelines.
4. NCI has clear and suitably documented policy and procedure for the management of this programme.
5. NCI has the policy, procedures and mechanisms in place that provide for it interfacing with QQI certification.

Part 2B Overall recommendation to QQI

Principal programme

Yes	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);[26]

Reasons[27] for the overall recommendation

Evidence for the validation recommendation is provided in the notes attached to under each of the criteria.

There are opportunities at a junior level in Data Analysis for graduates from programmes such as this in the Irish economy. The programme is well structured and challenging and should produce graduates who are ready for the workplace and who have the requisite knowledge, skill and competence to progress to degree level studies. The documentation indicates the type of roles available to graduates from this type of programme, together with the hard skills and competencies required by industry. Additionally, the submission demonstrates how soft skills and transferrable skills will be developed throughout the course of the programme.

Summary of recommended special conditions of validation

Principal Programme

1. The panel proposes as a **special condition of validation** that NCI ensures that all applicants from FET or equivalent institutions be required to provide proof of mathematical ability comparable to Leaving Certificate H5 in order to be admitted.
2. The Statistics 1 module is a 10 credit module only being offered in semester 2 and during the summer session in year 1 to part time applicants. The panel view this as a very challenging module that leaves little time for students to assimilate and process the knowledge and skills therein. The panel proposes as a **special condition of validation** that the coverage of Statistics throughout the programme be reviewed in full, to include significant revision in first year in light of the panel's concerns. Specifically, **(i)** the Statistics 1 module should be offered over two semesters, as two 5 credit modules **AND/OR (ii)** topics which are

[26] Normally an application that fails to meet the criteria in any of its aspects will be considered as not satisfactory. Nevertheless, so as to ensure that the validation process will not be implemented unreasonably, if an independent evaluation finds that a programme virtually meets the validation criteria but needs some minor modifications, the independent evaluation could conclude "Satisfactory subject to recommended special conditions" where the special conditions prescribe the defects that require to be corrected.

[27] Give precise reasons for the conclusions organised under each of the 12 criteria (for the programme and each embedded programme and any modules proposed to lead to QQI awards) citing supporting evidence. If any criteria or sub-criteria are not met by the application this must be stated explicitly giving precise reasons with evidence. A "Not Satisfactory" recommendation may be justified if any one of the applicable criteria or sub-criteria are not demonstrated to be satisfied.

adequately dealt with elsewhere in the programme (e.g. Time Series, PCA), should be removed from Statistics 1. This will also have a knock on effect on the part-time version of the programme and will need to be addressed in a manner that will not disadvantage the part-time students vis-à-vis the full-time students.

Summary of recommendations to the provider

Principal Programme

1. **It is recommended that***,* the programme development team review the workload that will apply to the part-time version of the programme with a view to addressing the issues outlined below. The part-time option reduces term workload from 30 to 20 credits by adding an extra period of teaching and study during the summer. Additionally, full-time learners have class contact for all but one of their modules (Data Architecture) which also has 18 hours of directed learning. In contrast, the part-time mode relies heavily on directed learning (some 25% of the modules). While this reduces the need to travel to the NCI campus, it remains unclear whether these learners will receive the same level of support from the College as their colleagues following the same programme full-time. This is particularly concerning with the Statistics 1 module being delivered by directed learning in the third (summer) period of year 1. It is questionable how this strategy meets the learners' needs. A special condition of validation, which the panel proposes to make to QQI in relation to the Statistics 1 module (p. 22), will necessitate a change to the part-time mode, as well as the full-time mode.
2. **It is recommended that** the programme team review the balance of workload for part-time learners to ensure that it is realistic and reasonable; and at each stage of the programme is not so onerous as to compromise learners achieving the requisite learning.

3. **It is recommended that** that the faculty seriously considers that one of the new hires should be a specialist in Statistics, rather than a Computer Scientist or Data Scientist with knowledge of statistics.
4. **It is recommended that** a list of software and computing resources more specific for Data Science should be presented to demonstrate the readiness of the programme given the fact that the College acknowledges the fact that big data, for example, is not manageable with traditional systems.
5. There was a general lack of detail about staff development opportunities in the documentation. **It is recommended that** this should be addressed in the revised submission document.
6. Contradictory assessment findings can emerge when the same learning outcomes are assessed by continuous assessment and written examinations. **It is recommended that** the module assessment strategies, in the interest of transparency, fairness and consistency explain why individual learning outcomes are assessed more than once.

Programme Documentation

1. In the revised documentation following consideration of the final Validation Report, in terms of mathematics support, a clear outline of the supports available to students who may potentially struggle in the programme with the mathematics components should be

included - (i.e. the mathematics support support centre and additional supports available from lecturers).

2. Outline specific resources for each module (this appears to be missing from some modules).
3. In relation to module assessments, add the underpinning reasons why different assessments modalities were chosen for different modules. For example, a 3 hour exam for 100% in one module, 100% CA in another, 20%,30%,40%, 50% or 100% CA in others, and proctored written examinations at 30%,40%, 50%, 60% and 100%, in others. While all of these may be valid choices in terms of assessment, there is no supporting strategy or evidence underpinning the choices made. 50% project in another.
4. Errors in the documentation provided to the panel, typographical, factual need to be corrected in the final programme document.

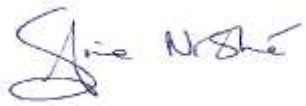
5. Module 6.5 for BSc needs more details on the tools that will be used (R, Python). The final programme document should provide a better indication of the available tools and the facilities in general.

Declarations of Evaluators' Interests

No interests have been declared.

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

Panel chairperson: Dr Áine Ní Shé Date: 8 March 2019



Signed:

Addendum

On behalf of the panel, I confirm that the programme team has responded appropriately to the special conditions of validation and the recommendations as set out in the report.

Panel chairperson: Dr Áine Ní Shé Date: 17/4/2019

Signed:

Disclaimer

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Part 3: Proposed programme schedules

Full-time Schedules

Name of Provider:	**National College of Ireland**
Programme Title	Higher Certificate in Data Science
Award Title	Higher Certificate in Data Science
Stage Exit Award Title[3]	N/A
Modes of Delivery (FT/PT):	**FT**
Teaching and learning modalities	Direct contact via lectures and demonstrations, Blended e-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		1	6		60	Sept 2019	

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 %**
Computational Thinking	1	M	6	5	125	24		101		100			
Discrete Mathematics	1	M	6	5	125	60		65		40			60
The Computing Industry	1	M	6	5	125	24		101		100			
Problem Solving & Programming Concepts	1	M	6	5	125	36		89		100			
Introduction to Data Science	1	M	6	10	250	48		202		30	70		
Programming I	2	M	6	5	125	48		77		50		50	
Introduction to Data Modelling and Databases	2	M	6	10	250	48		202		40			60
Statistics I	2	M	6	10	250	60		190		100			
Computing Systems	2	M	6	5	125	36		89		40			60
Special Regulations (Up to 280 characters)													

Name of Provider:	**National College of Ireland**
Programme Title	Higher Certificate in Data Science
Award Title	Higher Certificate in Data Science
Stage Exit Award Title[3]	N/A
Modes of Delivery (FT/PT):	**FT**
Teaching and learning modalities	Direct contact via lectures and demonstrations, Blended e-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		Award	6		60	September 2019	

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 %**
Data Visualisation	1	M	6	5	125	36		89		100			
Programming II	1	M	6	5	125	48		77		50		50	
Advanced Databases	1	M	6	10	250	48		202		40			60
Statistics II	1	M	6	10	250	48		202		50			50
Linear Algebra	2	M	6	5	125	36		89		40			60
IT Project Management	2	M	6	5	125	36		89		40			60
Data Mining and Machine Learning	2	M	6	10	250	48		202		40	60		
Programming III	2	E	6	10	250	60		190		50		50	
Data Analysis Project	2	E	6	10	250	60		190			100		

Special Regulations (Up to 280 characters)

Part-time Schedules

Name of Provider:	**National College of Ireland**
Programme Title	Higher Certificate in Data Science
Award Title	Higher Certificate in Data Science
Stage Exit Award Title3	N/A
Modes of Delivery (FT/PT):	**PT**
Teaching and learning modalities	Direct contact via lectures and demonstrations, Blended e-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		1	6		60	Sept 2019	

Module Title (Up to 70 characters including spaces)	**Semester no where applicable. (Semester 1, Semester 2 or Semester 3)**	**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 %**
Computational Thinking	1	M	6	5	125	24		101		100			
The Computing Industry	1	M	6	5	125	24		101		100			
Problem Solving & Programming Concepts	1	M	6	5	125	36		89		100			
Discrete Mathematics	1	M	6	5	125	60		65		40			60
Programming I	2	M	6	5	125	48		77		50		50	
Introduction to Data Modelling and Databases	2	M	6	10	250	48		202		40			60
Computing Systems	2	M	6	5	125	36		89		40			60
Introduction to Data Science	3	M	6	10	250	48		202		30	70		
Statistics I	3	M	6	10	250	60		190		100			
Special Regulations (Up to 280 characters)													

Name of Provider:	**National College of Ireland**
Programme Title	Higher Certificate in Data Science
Award Title	Higher Certificate in Data Science
Stage Exit Award Title[3]	N/A
Modes of Delivery (FT/PT):	**PT**
Teaching and learning modalities	Direct contact via lectures and demonstrations, Blended e-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		Award	6		60	September 2019	

Module Title (Up to 70 characters including spaces)	**Semester no where applicable. (Semester 1, Semester 2 or Semester 3)**	**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 %**
Programming II	1	M	6	5	125	48		77		50		50	
Statistics II	1	M	6	10	250	48		202		50			50
Data Visualisation	1	M	7	5	125	36		89		100			
Advanced Databases	2	M	6	10	250	48		202		40			60
Linear Algebra	2	M	6	5	125	36		89		40			60
IT Project Management	2	M	6	5	125	36		89		40			60
Data Mining and Machine Learning	3	M	6	10	250	48		202		40	60		
Programming III	3	E	6	10	250	60		190		50		50	
Data Analysis Project	3	E	6	10	250	60		190			100		
Special Regulations (Up to 280 characters)													

Part 4: Appendices

NCI Attendees

NCI Attendees

NCI Management and Support Staff

Ms Gina Quin	President
Mr John McGarrigle	Registrar
Ms Sinéad O'Sullivan	Director of Quality Assurance & Statistical Services
Dr David McCarthy	Quality Officer
Mr Jonathan Lambert	Maths Support & Development Officer
Ms Catherine Elliot	Learning Support
Mr Keith Brittle	Information Project Officer, NCI Library
Ms Helen Conway	Careers Advisor

Programme Team

Dr Pramod Pathak	Dean of School of Computing
Dr Paul Stynes	Vice Dean Undergraduate Programmes, School of Computing
Dr Arghir-Nicolae Moldovan	Programme Director, BSc Hons/BSc Ordinary Data Science
Dr Sachin Sharma	Programme Director, Higher Certificate in Science in Data Science
Prof Cristos Grecos	Vice Dean, Postgraduate Programmes, School of Computing
Mr Michael Bradford	Lecturer, School of Computing
Dr Horacio Gonzalez-Velez	Head of Cloud Competency Centre
Dr Cristina Hava Muntean	Senior Lecturer, School of Computing
Dr Dominic Carr	Lecturer, School of Computing
Dr Anu Sahni	Lecturer, School of Computing
Dr Adriana Chis	Lecturer, School of Computing
Dr Eugene O'Loughlin	Lecturer, School of Computing
Mr Tony Delaney	Associate Lecturer, School of Computing
Mr Victor Del Rosal	Associate Lecturer, School of Computing
Dr Evgeniia Volokitina	Lecturer, School of Computing

Ms Lisa Murphy	Lecturer, School of Computing
Mr Sam Cogan	Computer Support Officer, School of Computing
Dr Keith Maycock	Lecturer, School of Computing
Dr Ade Fajemisin	Lecturer, School of Computing

Agenda

New Programme Validation

1. **BSc Honours in Data Science**
2. **BSc Ordinary in Data Science (exit award)**
3. **Higher Certificate in Science in Data Science**
4. **Certificate in Data Science (Special Purpose Award)**
5. **Certificate in Introductory Data Science (Special Purpose Award)**

Time	Location	Item	Note
9.00am	Exec 1, NCI	**Evaluation of Programmes Proposed for Validation against QQI validation criteria**	Dean of School, Registrar Director QASS, Programme Director, Programme Team
		1. Programme Rationale and overall structure (all programmes)	
		Criterion 3: Programme concept, implementation strategy and interpretation of QQI award standards are well informed and soundly based	
		Criterion 2: Programme objectives and outcomes are clear and consistent with QQI awards sought	
		Criterion 4: Access Transfer & Progression arrangements are satisfactory	
10.30		**Break**	
10.45 am	Exec 1, NCI	**2. Curriculum, Learning Teaching & Assessment (all programmes)**	Dean of School, Registrar Director QASS, Programme Director, Programme Team
		Criterion 5: Written curriculum is well structured and fit for purpose	
		Criterion 9: There are sound learning and teaching strategies	
		Criterion 10: There are sound assessment strategies	
1pm		**Lunch**	
1.45-3pm	Exec 1, NCI	**Curriculum, Learning Teaching & Assessment (all programmes) continued**	
3.00pm	Exec 1, NCI	**3. Resourcing and Supports for Learners**	Dean of School, Director QASS, Programme Director, Programme Team

Time	Location	Item	Note
			Representatives from support services
		Criterion 6: There are sufficient qualified and capable programme staff available to implement the programme as planned	
		Criterion 7: The are sufficient physical resources available to implement the programme as planned	
		Criterion 8: The learning environment is consistent with the needs of the programme learners	
		Criterion 11: Learners enrolled on the programme are well informed and cared for	
		Criterion 12: The programme is well managed	
4.30pm	Exec 1, NCI	**Deliberation**	
4.45pm	Exec 1, NCI	**Oral feedback**	