

**QQI**Quality and Qualifications Ireland
Dearbhú Cáilíochta agus Cáilíochtaí Éireann

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

Part 1. Provider details

Provider name	DBS
Date of site visit	1 st July 2021
Date of report	10th August 2021

Section A. Overall recommendations

MSc in Data Analytics	Title	MSc in Data Analytics
	Award	Master of Science in Data Analytics
	Credit	90 ECTS
	Recommendation <i>Satisfactory OR Satisfactory subject to proposed conditions OR Not Satisfactory</i>	Satisfactory subject to proposed condition
Postgraduate Diploma in Data Analytics	Title	Postgraduate Diploma in Data Analytics
	Award	Postgraduate Diploma in Science in Data Analytics
	Credit	60 ECTS
	Recommendation <i>Satisfactory OR Satisfactory subject to proposed conditions OR Not Satisfactory</i>	Satisfactory subject to proposed condition
Certificate in Data Analytics	Title	Certificate in Data Analytics
	Award	Certificate in Data Analytics
	Credit	30 ECTS
	Recommendation <i>Satisfactory OR Satisfactory subject to proposed conditions OR Not Satisfactory</i>	Satisfactory subject to proposed condition

Section B. **Expert Panel**

Name	Role on Panel	Affiliation
Dr Annie Doona	Chair	Accredited National and International Higher Education Quality Reviewer, Retired President IADT and Education Consultant.
Mary Jennings	Report Writer	Independent Consultant
Dr Christopher McLoughlin	Academic	Lecturer in Data Analytics, Ulster University Business School.
Shruti Bansal	Academic	Lecturer in Data Analytics, UCD Professional Academy
Dr Stephan Onggo	Academic	Professor of Business Analytics at University of Southampton.
Aoife D'Arcy	Industry Expert	CEO of Krisolis
Komal Riddhish Bharadva	Learner Representative	NCI, MSc in Data Analytics (2020)

Section C. MSc in Data Analytics

Names of centre(s) where the programme(s) is to be provided	Maximum number of learners (<i>per centre</i>)	Minimum number of learners
DBS Campus	450	5

Proposed Enrolment	
Date of first intake	September 2021
Maximum number of annual intakes	3
Maximum total number of learners per intake	100
Programme duration (<i>months from start to completion</i>)	12 months (full-time) 18 months (part-time)
Panel Commentary on proposed enrolment: N/A	
Target learner groups	
<p>The Master of Science in Data Analytics programme is aimed at learners with a minimum second-class second-division (2.2) Level 8 honours bachelor's degree or Higher Diploma in a cognate area who wish to specialise in the field of Data Analytics with a view to entering industry. Cognate subjects include computer science, data science, technology, networking, information systems, engineering, general science, mathematics, statistics, data analytics or related discipline. Learners with a minimum second-class second-division (2.2) Level 8 honours bachelor's degree in a non-cognate area plus 3–5 years' professional experience in a related field and who require a qualification in this area in order to progress professionally. Learners can also access this programme through RPL. Such applicants will be assessed on a case-by-case basis. Due to the mathematical nature of the content, candidates will be required to show sufficient competency in mathematics, based on prior learning or professional experience. This can be further defined as module of mathematics/mathematics and statistics equivalent to a minimum of 10 ECTS in their primary degree.</p> <p>On completion of this programme, learners will have the expertise to operate at a professional level and effectively integrate their skills into decision-making in their company. Through the Applied Research Project, learners will develop independent research and problem-solving skills which will be valuable in a variety of contexts in the workplace.</p>	
Approved countries for provision	Ireland
Delivery mode: Full-time/Part-time	Full-time and part-time

The teaching and learning modalities	
<ul style="list-style-type: none"> • Lecture classroom-based sessions • Workshops • Practical lab sessions • Online class (broadcast live) • Online tutorial (interactive) 	
Brief synopsis of the programme (e.g. who it is for, what is it for, what is involved for learners, what it leads to.)	
<p>This Master of Science in Data Analytics has been designed to meet the growing need for graduates with data science skills in the light of increasing applications of new and existing technologies and techniques such as statistical analysis, machine learning and data visualisation across many industries throughout the global economy. Given the rapid growth in internet data usage, the shift to cloud computing, and the rate at which Irish businesses integrate data and analytics into their daily operations, Data Analytics is an identifiable discipline with a breadth and depth of content that encompasses many of the subfields (e.g., software development, machine learning, data visualisation that form the modern AI ecosystem).</p> <p>Semester one (FT) lays the groundwork for the programme and encompasses modules that focus on providing a solid and comprehensive understanding of the relevant concepts, a proficiency in the use of programming skills to gather, analyse, process and visualise data, statistics for data analytics and the application of pattern recognition in machine learning. Learners develop advanced applied skills in essential areas such as programming, statistical tools and techniques, techniques for pattern recognition on complex data sets, while also offering theoretical knowledge of cognitive science.</p> <p>Semester two (FT) builds on this by covering advanced modules in which the knowledge, understanding and skills acquired in the first semester can be employed. Semester two modules offer advanced and applied skills in topics such as data and network mining, databases and data storage, graph, data visualisation including foundations in linguistics, statistical analysis and applications. Semester two also comprises an Applied Research Methods module, which focuses on research and enquiry skills. This module will inform learners' Applied Research Project in Semester three (FT).</p> <p>In addition, the programme aims to incorporate advanced transversal skills in each module for the professional development of learners to enhance their employability options. This will enable the learner to integrate seamlessly into an organisation by addressing skills such as leadership, problem solving, teamwork, time management and academic writing that are essential for a Level 9 graduate.</p> <p>It is a 1-year full-time, 18 months part-time programme with five 10 ECTS and two 5 ECTS taught modules, and a 30 ECTS Applied Research Project.</p>	
Summary of specifications for teaching staff	WTE
<p>Staff delivering this programme will hold a minimum of a Level 9 Postgraduate Diploma or Master's degree in Data Analytics or in the following, or a related area:</p> <ul style="list-style-type: none"> • Mathematics • Statistics 	<p>5 full-time lecturers and 2 part-time lecturers</p>

<ul style="list-style-type: none"> • Computing • Computer Science • Software Development • Management Information Systems • Artificial Intelligence • Data Science • Data Analytics • Business Analytics <p>Holders of Level 8 honours Bachelor's degrees in a relevant discipline, who are exceptionally qualified by virtue of significant senior industry experience, will also be considered.</p>	
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Learning Activity	Ratio of learners to teaching staff
Lecture classroom-based sessions	1:50
Workshops on site	1:25
Practical lab sessions	1:35
Online class (broadcast live)	1:50
Online tutorial (interactive)	1:25
Asynchronous	n/a
Panel Commentary on programme outline and staffing:	

Section C (a) Postgraduate Diploma in Data Analysis

Names of centre(s) where the programme(s) is to be provided	Maximum number of learners (<i>per centre</i>)	Minimum number of learners
DBS Campus	450	5

Proposed Enrolment	
Date of first intake	September 2021
Maximum number of annual intakes	3
Maximum total number of learners per intake	100
Programme duration (<i>months from start to completion</i>)	9 months (full-time) 12 months (part-time)

Panel Commentary on proposed enrolment:	
Target learner groups	
As for MSc in Data Analytics above.	
Approved countries for provision	Ireland
Delivery mode: Full-time/Part-time	Full-time and part-time
The teaching and learning modalities	
<ul style="list-style-type: none"> • Lecture classroom-based sessions • Workshops • Practical lab sessions • Online class (broadcast live) • Online tutorial (interactive) 	
Brief synopsis of the programme (e.g. who it is for, what is it for, what is involved for learners, what it leads to.)	
<p>The Postgraduate Diploma in Science in Data Analytics is an embedded exit award in the Master of Science in Data Analytics. It has been designed to meet the growing need for practical applied skills in this emerging area and is for learners who cannot complete the full Master's award.</p> <p>Semester one (FT) lays the groundwork for the programme and encompasses mostly foundational modules that focus on providing a solid and comprehensive understanding of the relevant concepts, a proficiency in the use of programming skills to gather, analyse, process and visualise data, statistics for data analytics and the application of pattern recognition in machine learning. Learners develop advanced applied skills in essential areas such as programming, statistical tools and techniques, techniques for pattern recognition on complex data sets, while also offering theoretical knowledge of cognitive science.</p> <p>Semester two (FT) builds on this by covering advanced modules in which the knowledge, understanding and skills acquired in the first semester can be employed. Semester two modules offer applied skills in topics such as data and network mining, databases and data storage, graph, data visualisation including foundations in linguistics, statistical analysis and applications.</p> <p>In addition, the programme aims to incorporate advanced transversal skills in each module for the professional development of learners to enhance their employability options. This will enable the learner to integrate seamlessly into an organisation by addressing skills such as leadership, problem solving, teamwork, time management and structured writing that are essential for a Level 9 graduate.</p>	

It is a 9-months full-time, 12 months part-time programme with five 10 ECTS and two 5 ECTS taught modules.	
Summary of specifications for teaching staff	WTE
<p>Staff delivering this programme will hold a minimum of a Level 9 Postgraduate Diploma or Master's degree in Data Analytics or in the following, or a related area:</p> <ul style="list-style-type: none"> • Mathematics • Statistics • Computing • Computer Science • Software Development • Management Information Systems • Artificial Intelligence • Data Science • Data Analytics • Business Analytics <p>Holders of Level 8 honours Bachelor's degrees in a relevant discipline, who are exceptionally qualified by virtue of significant senior industry experience, will also be considered.</p>	5 full-time lecturers and 2 part-time lecturers

Learning Activity	Ratio of learners to teaching staff
Lecture classroom-based sessions	1:50
Workshops on site	1:25
Practical lab sessions	1:35
Online class (broadcast live)	1:50
Online tutorial (interactive)	1:25
Asynchronous	n/a
Panel Commentary on programme outline and staffing:	

Section C (b) Certificate in Data Analytics

Names of centre(s) where the programme(s) is to be provided	Maximum number of learners (<i>per centre</i>)	Minimum number of learners
DBS Campus	450	5

Proposed Enrolment	
Date of first intake	September 2021
Maximum number of annual intakes	3
Maximum total number of learners per intake	100
Programme duration (<i>months from start to completion</i>)	3 months FT 6 months PT
Panel Commentary on proposed enrolment:	
Target learner groups	
As for MSc in Data Analytics	
Approved countries for provision	Ireland
Delivery mode: Full-time/Part-time	Full-time and part-time
The teaching and learning modalities	
<ul style="list-style-type: none"> • Lecture classroom-based sessions • Workshops • Practical lab sessions • Online class (broadcast live) • Online tutorial (interactive) 	
Brief synopsis of the programme (e.g. who it is for, what is it for, what is involved for learners, what it leads to.)	
<p>The Certificate in Data Analytics is an embedded award in the Master of Science in Data Analytics. It is offered as an exit award to learners who cannot continue with the taught component of the first semester (FT) of this programme.</p> <p>The Certificate comprises three modules which focus on providing a solid knowledge, practical and cognitive skills in programming for data analytics, statistics for data analytics and machine learning and pattern recognition. Learners will be able to apply these skills in a diverse array of sectors and business applications. In addition, learners will demonstrate their knowledge, and skills in a form of portfolio that can be shared with future employers.</p> <p>It is a 3 -month full-time, 6-month part-time programme with three 10 ECTS taught modules.</p>	

Summary of specifications for teaching staff	WTE
<p>Staff delivering this programme will hold a minimum of a Level 9 Postgraduate Diploma or Master's degree in Data Analytics or in the following, or a related area:</p> <ul style="list-style-type: none"> • Mathematics • Statistics • Computing • Computer Science • Software Development • Management Information Systems • Artificial Intelligence • Data Science • Data Analytics • Business Analytics <p>Holders of Level 8 honours Bachelor's degrees in a relevant discipline, who are exceptionally qualified by virtue of significant senior industry experience, will also be considered.</p>	<p>5 full-time lecturers and 2 part-time lecturers</p>

Learning Activity	Ratio of learners to teaching staff
Lecture classroom-based sessions	1:50
Workshops on site	1:25
Practical lab sessions	1:35
Online class (broadcast live)	1:50
Online tutorial (interactive)	1:25
Asynchronous	n/a
Panel Commentary on programme outline and staffing:	

Part 2. Evaluation against the validation criteria

Criterion 1. The provider is eligible to apply for validation of the programme

<p>a) The provider meets the prerequisites (section 44(7) of the 2012 Act) to apply for validation of the programme.</p> <p>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.</p> <p>c) The provider has declared that their programme complies with applicable statutory, regulatory and professional body requirements.¹</p>		
	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Yes	
Postgraduate Diploma in Data Analytics	Yes	
Certificate in Data Analytics	Yes	

As an established provider of higher education programmes DBS has met the prerequisites (section 44(7) of the 2012 Act) to apply for revalidation of this programme. It was noted that DBS has in place procedures for access, transfer and progression. DBS has also established arrangements for the Protection of Enrolled Learners (PEL) which have been approved by QQI.

DBS provided the panel with a copy of the letter to be submitted to QQI with the application for the revalidation of the programmes. The letter contained the signature and declaration required under sub-criteria 1b) and 1c).

¹ 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

<p>a) The programme aims and objectives are expressed plainly.</p> <p>b) A QQI award is specified for those who complete the programme.</p> <p style="padding-left: 20px;">(i) Where applicable, a QQI award is specified for each embedded programme.</p> <p>c) There is a satisfactory rationale for the choice of QQI award(s).</p> <p>d) The award title(s) is consistent with unit 3.1 of QQI's <i>Policy and Criteria for Making Awards</i>.</p> <p>e) The award title(s) is otherwise legitimate for example it must comply with applicable statutory, regulatory and professional body requirements.</p> <p>f) The programme title and any embedded programme titles are</p> <p style="padding-left: 20px;">(i) Consistent with the title of the QQI award sought.</p> <p style="padding-left: 20px;">(ii) Clear, accurate, succinct and fit for the purpose of informing prospective learners and other stakeholders.</p> <p>g) For each programme and embedded programme</p> <p style="padding-left: 20px;">(i) The minimum intended programme learning outcomes and any other educational or training objectives of the programme are explicitly specified.²</p> <p style="padding-left: 20px;">(ii) The minimum intended programme learning outcomes to qualify for the QQI award sought are consistent with the relevant QQI awards standards.</p> <p>h) Where applicable, the minimum intended module learning outcomes are explicitly specified for each of the programme's modules.</p> <p>i) Any QQI minor awards sought for those who complete the modules are specified, where applicable.</p> <p>For each minor award specified, the minimum intended module learning outcomes to qualify for the award are consistent with relevant QQI minor awards standards.³</p>		
	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Yes	
Postgraduate Diploma in Data Analytics	Yes	
Certificate in Data Analytics	Yes	

The panel is satisfied that the programme's aims and objectives have been clearly expressed in the documentation provided.

It was concluded that the programme and module learning outcomes have been clearly outlined and were appropriate to the level of the awards. The titles of the programmes were deemed to be appropriate and in line with the QQI standard for the Major Award Type on the NFQ.

It was noted that the minimum intended programme learning outcomes for the MSc in Data Analytics were informed by the QQI Science Awards Standards for Higher Education and Training and have been mapped against these standards. It was noted that as the programme incorporates

² Other programme objectives, for example, may be to meet the educational or training requirements of a statutory, regulatory or professional body.

³ 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.

computing, the programme team has also reviewed the Computing Awards Standards and included these in the mapping process for the overall programme.

The Postgraduate Diploma in Science in Data Analytics is an embedded exit award in the Master of Science in Data Analytics. It has been designed to meet the growing need for practical applied skills in this emerging area and is for learners who cannot complete the full Master's and the panel concluded that this was appropriate.

The Certificate in Data Analytics is an embedded award in the Master of Science in Data Analytics. It is offered as an exit award to learners who cannot continue with the taught component of the first semester (FT) of this programme. It was noted that a revision to the programme made facilitates the learners to access core modules of the programme and to achieve the associated learning outcomes.

The panel noted that, in the documentation, there were a number of errors in, for instance, the section on Data Storage Solutions and Data Analysis modules and made the following recommendation:

Recommendation

It is recommended that any errors in the documentation be corrected, for example, those in the information provided on the Data Storage Solutions and Data Analysis modules.

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.⁴
- 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 evidence⁵ of learner demand for the programme.
 - (v) There is evidence of employment opportunities for graduates where relevant⁶.
 - (vi) The programme meets genuine education and training needs.⁷
- 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
MSc in Data Analytics	Yes	See Condition set in Criterion 5.
Postgraduate Diploma in Data Analytics	Yes	See Condition set in Criterion 5.
Certificate in Data Analytics	Yes	See Condition set in Criterion 5.

The panel is satisfied that the proposed programme had taken account of the views of stakeholders, including employers, learners and graduates in the review of the programme. It was noted that DBS is putting the programme forward for re-validation one year earlier than is required under QQI regulations. This reflects DBS's aspiration that, in a fast-evolving area such as data analytics, the overall programme is more fully aligned with trends and developments in data analytics. This

⁴ 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.

⁵ This might be predictive or indirect.

⁶ It is essential to involve employers in the programme development and review process when the programme is vocationally or professionally oriented.

⁷ 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.

ensures that a practical, applied programme is proposed that will attract learners, both domestic and international, who, in turn, can be ready to take up employment upon graduation.

It was noted that DBS has both formal and informal mechanisms in place for continuous consultation with employers in the sector. This includes a Computing Industry Advisory Board which provides input into the institution in various ways, including creating networking opportunities for learners.

Account had also been taken of government policy in relation to current and future training needs and employment opportunities as outlined in a series of reports cited in the documentation provided. These point to the need for the type of skills and attributes that the programme seeks to develop in its graduates in the field of data analytics.

As part of the review, a comparison with similar programmes had been undertaken and it was stated that the DBS's programme learning outcomes provide a broader scope of the core knowledge and analytical skills. The programme also offers learners the opportunity to acquire key transversal skills such as leadership, time-management, problem-solving and communication skills, which, increasingly, are both valued and required by employers.

Graduates that the panel met indicated that the programme had offered them relevant skills for employment in posts that required a knowledge and understanding of data analytics, with two being currently employed in the area of data warehousing in business consultancy firms. Skills such as time management in an online environment had also been useful, it was said.

An area of concern signalled by the panel related to the critical area of ethics and governance in relation to data analytics which was insufficiently covered in the overall learning outcomes for the programme and the learning outcomes of relevant modules. These topics are of major concern to employers right across the board and, in the view of the panel, need to be addressed in the proposed programme curriculum in a more comprehensive and integrated way. See Criterion 5 below where the panel has set a condition of validation to be met in relation to these areas.

Criterion 4. The programme's access, transfer and progression arrangements are satisfactory

<p>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 satisfied⁸.</p> <p>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.</p> <p>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 (CEFRL⁹) in order to enable learners to reach the required standard for the QQI award.</p> <p>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).</p> <p>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.</p> <p>f) The programme title (the title used to refer to the programme):-</p> <ul style="list-style-type: none"> (i) Reflects the core <i>intended programme learning outcomes</i>, 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. <p>g) The programme title is otherwise legitimate; for example, it must comply with applicable statutory, regulatory and professional body requirements.</p>		
	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Yes	
Postgraduate Diploma in Data Analytics	Yes	
Certificate in Data Analytics	Yes	

The panel found that the arrangements for access, transfer and progression are generally satisfactory and working in practice.

It was noted that, while the entry requirements are clear for applications with a cognate or non-cognate degree or higher diploma, reference was made in the Programme Document, Section 4.2.6

⁸ 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

⁹ http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf (accessed 26/09/2015)

that applicants must also have the minimum mathematics requirements, based on prior learning or professional experience. The panel indicated that this requirement might be emphasised in information provided to learners in advance of starting the course as considerable time may have elapsed since they had studied maths in a formal way. Similarly, the panel considered that it would be beneficial for learners to have extra support in the areas of data bases and using core software programmes such as Python and R in order to bridge the gap between entry requirements and module prerequisites and this support might be offered in advance of commencing their studies.

In response, DBS stated that initiatives such as offering pre-course options in relevant subjects did not have sufficient take-up by learners, and that the strategy now was to conduct class-based, early benchmarking of learners' ability in areas such as maths and use of data bases, with additional supports then being offered to learners who required this assistance.

The panel made the following recommendation in relation to the proposed programme under review.

Recommendation

It is recommended that DBS consider the introduction of a programme - for example an online learning platform or bootcamp - that covers the basics of Python, R, statistics and data bases to bridge any potential gap between the entry requirements and the module prerequisites.

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 principles¹⁰.
- 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.¹¹

	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Partially	See condition below.
Postgraduate Diploma in Data Analytics	Partially	See condition below.
Certificate in Data Analytics	Partially	See condition below.

In general, the curriculum is well-structured and fit for purpose. However, the panel is not satisfied that the important topic of ethics and governance in relation to data analytics is sufficiently covered in the curriculum and has set a condition of validation in this regard.

As outlined in Criterion 3 above, the panel considered that it is critical to have clear guidelines for ethical and governance issues covered throughout the curriculum, particularly in the learning outcomes for relevant modules, such as Data Analysis Module, Data Storage and Machine Learning for instance, rather than having the topics covered only in Applied Research Methods as is currently the case. The panel noted that it was important for learners to be fully acquainted with ethics and governance as these are crucial topics for employers at all levels, across different sectors. Areas to

¹⁰ 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.

¹¹ If the duration is variable, for example, when advanced entry is available, this should be explained and justified

be addressed include weaving issues around safety into data warehousing, security of data at a societal and political level, data integrity as well as issues around bias in data and consideration of any potential impact on the user that may need to be addressed.

DBS did indicate that the topic of ethics and governance was covered in many modules in different ways and more formally in the Applied Research Methods Module where learners have to include an ethical statement with their research proposal. Nevertheless, the panel considered that specific learning outcomes needed to be foregrounded in modules where ethical and governance issues applied and set the condition below. This includes modules taken by learners completing the Certificate element only.

Condition

It is a condition of validation that DBS include ethical and governance issues around data in the overall programme and relevant module learning outcomes, rather than having these topics in the Applied Research Methods Module only.

The panel is not satisfied that, while the technical aspects of the Data Analysis Module are covered in the learning outcomes, there is not sufficient attention to overall good programming practice on managing all the issues associated with code such as saving and deploying it, which is different to simply writing it. The panel recommended that specific learning outcomes be included in the module to address this issue. See also the discussion above and the condition set around governance and ethics more generally.

Recommendation

It is recommended that DBS include learning outcomes around good programming practice in the Programming for Data Analysis Module.

The panel found that, in line with good practice in data analytics, the topics such as Colour Theory be included as a means of providing greater accessibility to data for users is gaining traction across the industry. It was not evident that this is currently sufficiently covered in the Data Visualisation Module and the panel made the following recommendation:

Recommendation

It is recommended that DBS review the content of the Data Visualisation Module and include elements of accessibility such as Colour Theory.

The panel noted that the text book listing for modules provided in the documentation did not refer to the most up-to-date editions and made the following recommendation:

Recommendation

It is recommended that DBS review the text book listing across all modules to ensure that they contain the most up-to-date editions.

Criterion 6. There are sufficient qualified and capable programme staff available to implement the programme as planned

<p>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).</p> <p>b) The programme has an identified complement of staff¹² (or potential staff) who are available, qualified and capable to provide the specified programme in the context of their existing commitments.</p> <p>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.</p> <p>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 development¹³ opportunities¹⁴.</p> <p>e) There are arrangements for programme staff performance to be reviewed and there are mechanisms for encouraging development and for addressing underperformance.</p> <p>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.</p>		
	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Yes	
Postgraduate Diploma in Data Analytics	Yes	
Certificate in Data Analytics	Yes	

The panel is satisfied that there sufficient and capable qualified staff to implement the programme as planned.

The panel found that there was a clear, 4-step Faculty Pathway process for the on-boarding of new lecturers into the faculty and programme. The Pathway included induction pre-teaching on key areas such as MOODLE and e-learning platforms used in the programme; meeting of other team members in the faculty; review after one week’s teaching and another review after 6 months. This systematic

¹² 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.

¹³ 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.

¹⁴ 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.

and comprehensive process ensured that staff were supported at critical junctures, the panel was told. The panel commends DBS for this approach.

Commendation

The panel commends DBS for its comprehensive on-boarding process for new staff.

The panel was informed that DBS makes funds available to staff to attend conferences or other events in order to support their continuous professional development. A research scholarship fund is also available. There is a Research Day held annually where faculty members present recent or on-going research; this may also be published in a DBS publication managed by the library services.

There are also CPD events held within DBS, including a focus on up-to-date teaching and learning strategies, with upskilling of staff to deliver the programme in a multi-modal way.

It was stated that DBS pays particular attention to pastoral care for staff, with employee assistance programmes available, including a staff health-line. DBS reported that it had undertaken some benchmarking of this area with institutions in the UK and were developing a whole-college approach to mental well-being, involving both staff and learners.

It was evident that, in meeting with the lecturers and other staff during the review that there was good cooperation between staff at different levels with, for example, the Student Engagement and Success Unit (SESU) working in close collaboration with the teaching staff. Similarly, the library services worked in closely with the faculty staff, including the provision of new services such as the Computing Academic Technical Support (CATS) programme now being piloted. See Criterion 8 for further information.

Commendation

The panel commends DBS for its culture of collaboration and collegiality.

Criterion 7. There are sufficient physical resources to implement the programme as planned

<p>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).</p> <p>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:</p> <ul style="list-style-type: none"> (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 <p>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).</p> <p>d) There is a five-year plan for the programme. It should address</p> <ul style="list-style-type: none"> (i) Planned intake (first five years) and (ii) The total costs and income over the five years based on the planned intake. <p>e) The programme includes controls to ensure entitlement to use the property (including intellectual property, premises, materials and equipment) required.</p>		
	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Yes	
Postgraduate Diploma in Data Analytics	Yes	
Certificate in Data Analytics	Yes	

The review by the panel took place via Zoom, as public health restrictions were in place due to the COVID-19 pandemic. It was not possible therefore for the panel to view the facilities provided on campus or virtually. The panel was informed that DBS had sufficient resources such as software programmes, repository of data sets for project and research work, mobile labs, study spaces and AV studios in place to undertake the proposed programme.

The library has sufficient online resources with a range of publications and data bases on data analytics readily accessible. It was also noted that the library staff are involved in providing learner supports such as short courses in academic writing and in using the library facilities to conduct academic research. There is an online portal on academic research resources with a section specifically dedicated to computer sciences. Library staff also provide support in the preparation of

artefacts for learner portfolios, e.g., advice on the preparation for publication of research or conference material undertaken by learners in the course of their studies, the panel was informed.

It was stated that DBS is currently piloting a programme through the library services entitled Computer Academic Technical Support (CATS) to provide additional support for learners on topics such as use of Python, R and Java across all its programmes in computer science. The panel welcomes this initiative. See Criterion 8 for further comment on this.

The panel is satisfied that there are sufficient resources in place, both on campus and online to deliver the programme as planned.

Criterion 8. The learning environment is consistent with the needs of the programme's learners

<p>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.</p> <p>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.</p> <p>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.</p>		
	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Yes	
Postgraduate Diploma in Data Analytics	Yes	
Certificate in Data Analytics	Yes	

The panel was informed of the resources and general environment support learners in attaining the intended programme learning outcomes and is satisfied that these are sufficient to support learners throughout the programme.

Through on-going feedback from learners, by way of survey and also through meetings with elected class representatives and peer mentors, DBS is able to identify any issues that learners may have, particularly in the first 100 days. For example, the Student Engagement and Success Unit (SESU) tracks class attendance rates, engagement with Moodle and library services by learners. This data allows SESU to identify learners who may need additional support at an early stage. This may be in the form of additional classes in, for example, maths and statistics, academic writing or other supports.

The panel found that the learners and graduates met at the review session confirmed that feedback provided was taken into account by DBS and that, in particular, staff, including lecturers and administrative personnel, were very accessible, willing to listen and to resolve queries or complaints quickly and efficiently.

The panel was informed that DBS is currently piloting a programme through the library services entitled Computer Academic Technical Support (CATS). This an online platform will provide additional short course in topics such as Python, R, and statistics. The panel was further informed that it is the intention to have this platform available to learners on the proposed programme, following the pilot review. See Criterion 7 for further comment. The panel commends DBS for this initiative to enhance the learning environment for learners.

Commendation

The panel commends DBS for the introduction of a Computer Academic Technical Support (CATS) to support learners' progress.

Criterion 9. There are sound teaching and learning strategies

<p>a) The teaching strategies support achievement of the intended programme/module learning outcomes.</p> <p>b) The programme provides authentic learning opportunities to enable learners to achieve the intended programme learning outcomes.</p> <p>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).</p> <p>d) Learning is monitored/supervised.</p> <p>e) Individualised guidance, support¹⁵ and timely formative feedback is regularly provided to enrolled learners as they progress within the programme.</p>		
	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Yes	
Postgraduate Diploma in Data Analytics	Yes	
Certificate in Data Analytics	Yes	

The panel was informed that DBS intend to deliver the programme using a multi-modal approach to teaching and learning, with a mix of in-class, online and asynchronous delivery modes. It was said that, as a result of the restrictions imposed by public health guidelines during the COVID-19 pandemic DBS, has had to develop more flexible way to deliver its programmes. The learning from this experience is now embedded in the teaching and learning strategies for the proposed programme and the panel considered this blended learning approach to be appropriate.

In discussion with lecturing staff at the review, the panel invited DBS to consider the opportunity for a greater degree of cross-functional learning between modules. For example, if a particular data set is used in the CA for both the statistics module and the module on data warehousing or other modules, this can help the learner to deepen their understanding of how to apply concepts to a range of business issues in an integrated way. Other materials, such as case studies, might be used for cross-functional, applied learning. See also the recommendation in Criterion 10 on the importance of assessing the capacity to interpret and apply results to further business goals for organisations.

Recommendation

It is recommended that DBS consider cross-functional learning between the modules to include greater sharing of materials, such as data set.

The panel considered that that sequence in which the modules are offered needs to be carefully considered by DBS. For example, in semester one, the three modules which run concurrently all have

¹⁵ 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.

interdependencies in that learners will need to have covered the material in order to reach the desired learning outcomes in each of these modules in order to effectively progress to modules offered later in the programme.

Recommendation

It is recommended that DBS put in safeguards to ensure that modules that have interdependencies and are running concurrently do not disadvantage learners reaching any learning outcomes.

Criterion 10. **There are sound assessment strategies**

<p>a) All assessment is undertaken consistently with Assessment Guidelines, Conventions and Protocols for Programmes Leading to QQI Awards¹⁶</p> <p>b) The programme’s assessment procedures interface effectively with the provider’s QQI approved quality assurance procedures.</p> <p>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.¹⁷</p> <p>d) The programme includes formative assessment to support learning.</p> <p>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.¹⁸</p> <p>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.</p> <p>g) There are sound procedures for the moderation of summative assessment results.</p> <p>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.¹⁹</p>		
	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Yes	
Postgraduate Diploma in Data Analytics	Yes	
Certificate in Data Analytics	Yes	

In general, the panel is satisfied that there are sound assessment strategies in place for the proposed programme. It was noted that DBS had reviewed the assessment strategy as part of the review process and made changes to the assessment strategy in certain modules in the light of feedback from External Examiners and staff. It was stated that, with opportunities for feedback and positive reinforcement, the programme contains continuous assessment as a means of offering students the possibilities of evidencing their learning within taught modules.

In discussion at the site visit, it was suggested that an MCQ-based exam at the end of the module on Programming for Data Analysis be considered as an effective method of assessment for the type of content covered and recommends that DBS give consideration to this for the proposed programme.

¹⁶ See the section on transitional arrangements.

¹⁷ This assumes the minimum intended programme/module learning outcomes are consistent with the applicable awards standards.

¹⁸ 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.

¹⁹ 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).

Recommendation

It is recommended that DBS consider the introduction of an MCQ-based exam at the end of the Programming for Data Analysis.

It was reported that, in the assessment of group projects, there is a group mark and also an individual mark assigned. The latter is based on the learner's report of their particular contribution to the group project. It was further stated by the team that, while there is not a standard document outlining a consistent marking process to be followed by lecturers, guidelines are provided for this purpose.

The panel noted that DBS has an internal QA process for assessment with a second marker, a moderator and the Examination Office also reviews results to ensure consistency and fairness in marking all assessments, including group projects.

The panel recommended that having a formal, shared policy document around group assessments would be of benefit, particularly in ensuring consistency for learners and made the following recommendation:

Recommendation

It is recommended that DBS devise a shared policy document around group work assessment to ensure consistency for the learners.

The panel considered, that as this is an applied programme, it was important to ensure that learners are able to demonstrate the capacity not just to analysis results or present information but, crucially, to demonstrate the capacity to interpret the results and make appropriate recommendations, in clear language, that can help further business goals. The panel considered that it would be beneficial to assess this capacity as a component in modules, where appropriate, and made the following recommendation.

Recommendation

It is recommended that DBS review all module assessments to ensure that there is an assessed component that is about the interpretation of the results into a business context.

Criterion 11. **Learners enrolled on the programme are well informed, guided and cared for**

<p>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.</p> <p>b) Information is provided about learner supports that are available to learners enrolled on the programme.</p> <p>c) Specific information is provided to learners enrolled on the programme about any programme-specific appeals and complaints procedures.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>g) The programme provides supports for enrolled learners who have special education and training needs.</p> <p>h) The programme makes reasonable accommodations for learners with disabilities²⁰.</p> <p>i) If the programme aims to enrol international students it complies with the <i>Code of Practice for Provision of Programmes to International Students</i>²¹ 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.</p> <p>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).</p>		
	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Yes	
Postgraduate Diploma in Data Analytics	Yes	
Certificate in Data Analytics	Yes	

The panel was advised that DBS uses a number of mechanisms to develop and implement supports for students including:

Learner surveys

- Peer Mentoring Support (with training provided for mentors)
- Student representation on the Academic Board and Board of Studies
- Support for, and engagement with, an elected Student Union
- Student services for:

²⁰ 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).

²¹ See Code of Practice for Provision of Programmes to International Students (QQI, 2015)

- Accommodation
- Counselling and referral services
- Sports and societies, with many student-led events
- Entertainment
- Career Hub

The panel found that these are well-established services and, in general are working well in practice.

In discussion at the review session, DBS provided details of its career services, including its Career Workshops which provided assistance with the preparation of CVs, preparation for interview and opportunities for networking with industry. In discussion with learners and graduates at the session, the panel found that, while they were aware of the service, they indicated that this optional, non-credit-bearing service, was not being availed of by many learners, even though the potential benefits of it were clear. The panel considered that a higher rate of uptake be achieved through the recommendation below.

Recommendation

It is recommended that DBS consider the optional nature of the Career Workshops conducted by the Career Hub as the panel considered that these could be of benefit to all learners on the programme.

Criterion 12. **The programme is well managed**

<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>e) Quality assurance²² is intrinsic to the programme’s maintenance arrangements and addresses all aspects highlighted by the validation criteria.</p> <p>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.</p> <p>g) The programme operation and management arrangements are coherently documented and suitable.</p> <p>h) There are sound procedures for interface with QQI certification.</p>		
	Satisfactory? (yes, no, partially)	Comment
MSc in Data Analytics	Yes	
Postgraduate Diploma in Data Analytics	Yes	
Certificate in Data Analytics	Yes	

The panel were satisfied that there are effective structures in place for the governance and management of the programme under review. The QAH contains the governance structures for the College and procedures for access, transfer and progression, learner assessments and supports, and teaching and learning.

It was noted that the QAH and associated policies and procedures have been developed in line with QQI statutory guidelines.

²² See also QQI’s Policy on Monitoring (QQI, 2014)

Part 3. Overall recommendation to QQI

3.1 MSc in Data Analytics:

Select one	
	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 condition set.	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

1. The programme meets the Criteria set by QQI

Commendations

1. The panel commends DBS for its comprehensive on-boarding process for new staff.
2. The panel commends DBS for its culture of collaboration and collegiality.
3. The panel commends DBS for the introduction of a Computer Academic Technical Support (CATS) to support learners' progress.

Special Conditions of Validation (directive and with timescale for compliance)

It is a condition of validation that DBS include ethical and governance issues around data in the overall programme and relevant module learning outcomes, rather than having these topics in the Applied Research Methods Modules only

Recommendations

1. It is recommended that any errors in the documentation be corrected, for example, those in the information provided on the Data Storage Solutions and Data Analysis modules.
2. It is recommended that DBS consider the introduction of a programme for example, an online learning platform or bootcamp, that covers the basics of Python, R, statistics and data bases to bridge any potential gap between the entry requirements and the module prerequisites.
3. It is recommended that DBS include learning outcomes around good programming practice in the Programming for Data Analysis Module.
4. It is recommended that DBS review the content of the Data Visualisation Module and include elements of accessibility such as Colour Theory.
5. It is recommended that DBS review the text book listing across all modules to ensure that they contain the most up-to-date editions.
6. It is recommended that DBS consider cross-functional learning between the modules to include greater sharing of materials, such as data set.
7. It is recommended that DBS put in safeguards to ensure that modules that have interdependencies and are running concurrently do not disadvantage learners reaching any learning outcomes.
8. It is recommended that DBS consider the introduction of an MCQ-based exam at the end of the Programming for Data Analysis.
9. It is recommended that DBS devise a shared policy document around group work assessment to ensure consistency for the learners.
10. It is recommended that DBS review all module assessments to ensure that there is an assessed component that is about the interpretation of the results into a business context.
11. It is recommended that DBS consider the optional nature of the Career Workshops conducted by the Career Hub as the panel considered that these could be of benefit to all learners on the programme.

3.2 Postgraduate Diploma in Data Analytics:

Select one	
	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 condition set	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

1. The programme meets the Criteria set by QQI

Commendations

1. The panel commends DBS for its comprehensive on-boarding process for new staff.
2. The panel commends DBS for its culture of collaboration and collegiality.
3. The panel commends DBS for the introduction of a Computer Academic Technical Support (CATS) to support learners' progress.

Special Conditions of Validation (directive and with timescale for compliance)

1. It is a condition of validation that DBS include ethical and governance issues around data in the overall programme and relevant module learning outcomes, rather than having these topics in the Applied Research Methods Modules only.

Recommendations

1. It is recommended that any errors in the documentation be corrected, for example, those in the information provided on the Data Storage Solutions and Data Analysis modules.
2. It is recommended that DBS consider the introduction of a programme for example, an online learning platform or bootcamp, that covers the basics of Python, R, statistics and data bases to bridge any potential gap between the entry requirements and the module prerequisites.
3. It is recommended that DBS include learning outcomes around good programming practice in the Programming for Data Analysis Module.
4. It is recommended that DBS review the content of the Data Visualisation Module and include elements of accessibility such as Colour Theory.
5. It is recommended that DBS review the text book listing across all modules to ensure that they contain the most up-to-date editions.
6. It is recommended that DBS consider cross-functional learning between the modules to include greater sharing of materials, such as data set.
7. It is recommended that DBS put in safeguards to ensure that modules that have interdependencies and are running concurrently do not disadvantage learners reaching any learning outcomes.
8. It is recommended that DBS consider the introduction of an MCQ-based exam at the end of the Programming for Data Analysis.
9. It is recommended that DBS devise a shared policy document around group work assessment to ensure consistency for the learners.
10. It is recommended that DBS review all module assessments to ensure that there is an assessed component that is about the interpretation of the results into a business context.
11. It is recommended that DBS consider the optional nature of the Career Workshops conducted by the Career Hub as the panel considered that these could be of benefit to all learners on the programme.

3.3 Certificate in Data Analytics:

Select one	
	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 condition set	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

1. The programme meets the Criteria set by QQI

Commendations

1. The panel commends DBS for its comprehensive on-boarding process for new staff.
2. The panel commends DBS for its culture of collaboration and collegiality.
3. The panel commends DBS for the introduction of a Computer Academic Technical Support (CATS) to support learners' progress.

Special Conditions of Validation (directive and with timescale for compliance)

It is a condition of validation that DBS include ethical and governance issues around data in the overall programme and relevant module learning outcomes, rather than having these topics in the Applied Research Methods Modules only.

Recommendations

1. It is recommended that any errors in the documentation be corrected, for example, those in the information provided on the Data Storage Solutions and Data Analysis modules.
2. It is recommended that DBS consider the introduction of a programme for example, an online learning platform or bootcamp, that covers the basics of Python, R, statistics and data bases to bridge any potential gap between the entry requirements and the module prerequisites.
3. It is recommended that DBS include learning outcomes around good programming practice in the Programming for Data Analysis Module.
4. It is recommended that DBS review the content of the Data Visualisation Module and include elements of accessibility such as Colour Theory.
5. It is recommended that DBS review the text book listing across all modules to ensure that they contain the most up-to-date editions.
6. It is recommended that DBS consider cross-functional learning between the modules to include greater sharing of materials, such as data set.
7. It is recommended that DBS put in safeguards to ensure that modules that have interdependencies and are running concurrently do not disadvantage learners reaching any learning outcomes.
8. It is recommended that DBS consider the introduction of an MCQ-based exam at the end of the Programming for Data Analysis.
9. It is recommended that DBS devise a shared policy document around group work assessment to ensure consistency for the learners.
10. It is recommended that DBS review all module assessments to ensure that there is an assessed component that is about the interpretation of the results into a business context.
11. It is recommended that DBS consider the optional nature of the Career Workshops conducted by the Career Hub as the panel considered that these could be of benefit to all learners on the programme.

3.4 Summary of recommended special conditions of validation

as above

3.5 Summary of recommendations to the provider

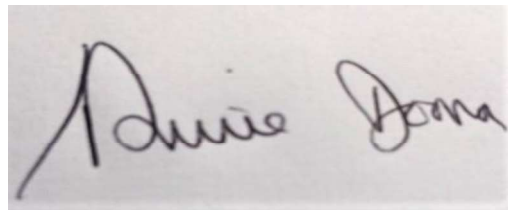
as above

3.6 Declarations of Evaluators' Interests

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

Panel chairperson: Dr Annie Doona

Date: 10th August 2021_____

A photograph of a handwritten signature in black ink on a light-colored surface. The signature is written in a cursive style and reads "Annie Doona".

Signed:

3.7 Disclaimer

The Report of the External Review Panel contains no assurances, warranties or representations express or implied, regarding the aforesaid issues, or any other issues outside the Terms of Reference.

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