Qualification Specification for:

OCN NI Level 5 Certificate in Data Analytics
➤ **Qualification No: 610/0599/X**

Qualification Regulation Information

OCN NI Level 5 Certificate in Data Analytics
Qualification Number: 610/0599/X

Operational start date: 15 March 2022
Operational end date: 28 February 2027
Certification end date: 28 February 2032

Qualification operational start and end dates indicate the lifecycle of a regulated qualification. The operational end date is the last date by which learners can be registered on a qualification. The certification end date is the last date by which learners have to complete the qualification and claim their certificate.

All OCN NI regulated qualifications are published to the Register of Regulated Qualifications (**http://register.ofqual.gov.uk/**). This site shows the qualifications and awarding organisations regulated by CCEA Regulation and Ofqual.

OCN NI Contact Details

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Foreword

This document explains OCN NI's requirements for the delivery and assessment of the following regulated qualification:

→ **OCN NI Level 5 Certificate in Data Analytics**

This specification sets out:

- Qualification features
- Centre requirements for delivering and assessing the qualifications
- The structure and content of the qualifications
- Unit Details
- Assessment requirements for the qualification
- OCN NI's quality assurance arrangements for the qualifications
- Administration

OCN NI will notify centres in writing of any major changes to this specification. We will also publish changes on our website at **www.ocnni.org.uk**

This specification is provided online, so the version available on our website is the most up to date publication. It is important to note that copies of the specification that have been downloaded and printed may be different from this authoritative online version.

Contents

About Regulation

OCN NI

Open College Network Northern Ireland (OCN NI) is a regulated Awarding Organisation based in Northern Ireland. OCN NI is regulated by CCEA Regulation to develop and award professional and technical (vocational) qualifications from Entry Level up to and including Level 5 across all sector areas. In addition, OCN NI is regulated by Ofqual to award similar qualification types in England.

The Regulated Qualifications Framework: an overview

The Regulated Qualifications Framework (RQF) was introduced on 1st October 2015: the RQF provides a single framework for all regulated qualifications.

Qualification Level
The level indicates the difficulty and complexity of the knowledge and skills associated with any qualification. There are eight levels (Levels 1-8) supported by three 'entry' levels (Entry 1-3).

Qualification Size
Size refers to the estimated total amount of time it could typically take to study and be assessed for a qualification. Size is expressed in terms of Total Qualification Time (TQT), and the part of that time typically spent being taught or supervised, rather than studying alone, is known as Guided Learning Hours (GLH).

Qualification Features

Sector Subject Area
6.1   ICT for Practitioners

This qualification relates to the following National Occupational Standards:

ESKITP802401 - Design and Implement Data Analysis Studies (ukstandards.org.uk)

Qualification Aim
The aim of the OCN NI Level 5 Certificate in Data Analytics qualification is to enable the learner to work with and analyse large data sets in order to inform organisational decision making.

Qualification Objectives
The objectives of the OCN NI Level 5 Certificate in Data Analytics are to enable the learner to carry out the following:

- design and create relational databases and associated queries
- use open-source frameworks to manage big data
- design, develop and implement computer-based algorithms

Grading
Grading for this qualification is pass/fail.

Qualification Target Group
The OCN NI Level 5 Certificate in Data Analytics is suitable for learners who work in or intend to work in data analytics and related roles.

Progression Opportunities
The OCN NI Level 5 Certificate in Data Analytics will enable learners to progress to higher level qualifications in the areas of information technology and/or data analytics. This qualification may also assist learners to gain employment in occupations requiring data analytics skills.

Entry Requirements
Learners must be at least 18 years of age and have a level three qualification in information technology or related subjects or have relevant information technology experience equivalent to at least a level three qualification in information technology.

Qualification Support

A Qualification Support pack is available for OCN NI centres within the login area of the OCN NI website (https://www.ocnni.org.uk/my-account/), which includes additional support for teachers, eg planning and assessment templates, guides to best practice, etc.

Delivery Languages

This qualification is available in English only at this time. If you wish to offer the qualification in Welsh or Irish (Gaeilge) then please contact OCN NI who will review demand and provide as appropriate.

Centre Requirements for Delivering the Qualification

Centre Recognition and Qualification Approval

New and existing OCN NI recognised centres must apply for and be granted approval to deliver these qualifications prior to the commencement of delivery.

Centre Staffing

Centres are required to have the following roles in place as a minimum, although a member of staff may hold more than one role*:

- Centre contact
- Programme co-ordinator
- Assessor
- Internal Verifier

*Note: A person cannot be an internal verifier for any evidence they have assessed.

Tutors

Tutors delivering the qualification should be occupationally competent, qualified to at least one level higher than the qualification and have a minimum of one year's experience in data analytics.

Assessors

The qualifications are assessed within the centre and are subject to OCN NI's quality assurance processes. Units are achieved through internally set, internally assessed, and internally verified evidence.

Assessors must:

- be occupationally competent and qualified to at least one level higher than the qualification
- have a minimum of one year's experience in data analytics
- have direct or related relevant experience in assessment
- assess all assessment tasks and activities

Internal Verification

OCN NI qualifications must be scrutinised through the centre's internal quality assurance processes as part of the recognised centre agreement with OCN NI. The centre must appoint an experienced and trained internal verifier whose responsibility is to act as the internal quality monitor for the verification of the delivery and assessment of the qualifications.

The centre must agree a working model for internal verification with OCN NI prior to delivery of the qualification.

Internal Verifiers must:
- have at least one year's occupational experience in the areas they are internally verifying
- attend OCN NI's internal verifier training if not already completed

Internal verifiers are required to:
- support tutors and assessors
- sample assessments according to the centre's sampling strategy
- ensure tasks are appropriate to the level being assessed
- maintain up-to-date records supporting the verification of assessment and learner achievement

Structure and Content

OCN NI Level 5 Certificate in Data Analytics

To achieve the OCN NI Level 5 Certificate in Data Analytics learners must successfully complete all three units – 15 credits.

Total Qualification Time (TQT) for this qualification: 150 hours
Guided Learning Hours (GLH) for this qualification: 64 hours

Unit Reference Number	OCN NI Unit Code	Unit Title	Credit Value	GLH	Level
D/650/1727	CBF779	Data and Relational Databases	3	12	Five
F/650/1728	CBF780	Managing Big Data	4	22	Five
H/650/1729	CBF781	Programming Design, Development and Testing	8	30	Five

Unit Details

Title	Data and Relational Databases
Level	Five
Credit Value	3
Guided Learning Hours (GLH)	12
OCN NI Unit Code	CBF779
Unit Reference No	D/650/1727

Unit purpose and aim(s): This unit will enable the learner to understand data types and be able to design and create relational databases and associated queries.

Learning Outcomes	Assessment Criteria
1. Understand data, business intelligence and analytic techniques.	1.1. Explain what is meant by data types, strings and arrays. 1.2. Explain using examples the characteristics of relational data. 1.3. Explain data visualisation and reporting. 1.4. Explain using examples the following business intelligence and analytic techniques and their applications: a) descriptive b) diagnostic c) predictive d) prescriptive e) cognitive
2. Be able to design and create relational databases.	2.1. Explain the principles of relational databases and their design including: a) tables b) index c) views tables 2.2. Explain provisioning and deployment of relational data services. 2.3. Create and implement a relational database design for different specifications using a given sets of data to include: a) purpose of your database b) dividing information into tables c) setup primary keys d) set up table relationships e) data normalisation
3. Be able to design Structured Query Language (SQL) queries.	3.1. Create a series of SQL based queries using multiple criteria to return results. 3.2. Demonstrate how to embed queries into a form to return results into different report formats.

Assessment Guidance		
The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.		

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion

	A collection of documents containing work that shows the learner's progression through the course	
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practice and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Managing Big Data
Level	Five
Credit Value	4
Guided Learning Hours (GLH)	22
OCN NI Unit Code	CBF780
Unit Reference No	F/650/1728

Unit purpose and aim(s): This unit will enable the learner to understand the characteristics of big data and how to use open-source frameworks to manage big data.

Learning Outcomes	Assessment Criteria
1. Understand big data and associated challenges.	1.1. Explain what is meant by and the characteristics of big data including: a) velocity b) volume c) value d) variety e) veracity 1.2. Explain the challenges posed by working with big data and how they can be addressed.
2. Be able to manage big data using open-source frameworks.	2.1. Explain the use of different open-source frameworks and associated tools used to manage big data including: a) MapReduce b) hive data warehousing c) spark data warehousing 2.2. Select and implement an open-source framework to manage given raw big data using: a) MongoDB b) OpenRefine c) RapidMiner d) Qubole

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log

Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Programming Design, Development and Testing
Level	Five
Credit Value	8
Guided Learning Hours (GLH)	30
OCN NI Unit Code	CBF781
Unit Reference No	H/650/1729

Unit purpose and aim(s): This unit will enable the learner to understand how to design, develop and implement computer-based algorithms.

Learning Outcomes	Assessment Criteria
1. Be able to apply the principles of programming design.	1.1. Explain the principles of programming design including: a) variables b) constants and data c) types of data input and output including validation arrays 1.2. Develop solutions to different problems using industry coding standards including: a) comments b) indentation c) identifier naming conventions 1.3. Implement programme control using a) sequence b) selection c) iteration
2. Be able to design, develop and debug computer programmes.	2.1. Explain the purpose of modularisation methods including: a) value and void methods functions, b) parameters c) return types of variable scope 2.2. Design, develop and debug computer programmes to meet different specifications and to industry coding standards.
3. Be able to test computer programmes.	3.1. Explain the purpose, nature and application of programme testing. 3.2. Carry out programme testing on the computer programmes developed in AC 2.2.

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion

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Quality Assurance of Centre Performance

External Verification

All OCN NI recognised centres are subject to External Verification. External verification visits and monitoring activities will be conducted annually to confirm continued compliance with the conditions of recognition, review the centre's risk rating for the qualification and to assure OCN NI of the maintenance of the integrity of the qualification.

The External Verifier will review the delivery and assessment of this qualification. This will include the review of a sample of assessment evidence and evidence of the internal verification of assessment and assessment decisions. This will form the basis of the External Verification report and will inform OCN NI's annual assessment of centre compliance and risk. The External Verifier is appointed by OCN NI.

Standardisation

As a process, standardisation is designed to ensure consistency and promote good practice in understanding and the application of standards. Standardisation events:

- make qualified statements about the level of consistency in assessment across centres delivering a qualification
- make statements on the standard of evidence that is required to meet the assessment criteria for units in a qualification
- make recommendations on assessment practice
- produce advice and guidance for the assessment of units
- identify good practice in assessment and internal verification

Centres offering units of an OCN NI qualification must attend and contribute assessment materials and learner evidence for standardisation events if requested.

OCN NI will notify centres of the nature of sample evidence required for standardisation events (this will include assessment materials, learner evidence and relevant assessor and internal verifier documentation). OCN NI will make standardisation summary reports available and correspond directly with centres regarding event outcomes.

Administration

Registration

A centre must register learners within 20 working days of commencement of a qualification.

Certification

Certificates will be issued to centres within 20 working days of receipt of correctly completed results marksheets. It is the responsibility of the centre to ensure that certificates received from OCN NI are held securely and distributed to learners promptly and securely.

Charges

OCN NI publishes all up to date qualification fees in its Fees and Invoicing Policy document. Further information can be found on the centre login area of the OCN NI website.

Equality, Fairness and Inclusion

OCN NI has considered the requirements of equalities legislation in developing the specification for these qualifications. For further information and guidance relating to access to fair assessment and the OCN NI Reasonable Adjustments and Special Considerations policies, centres should refer to the OCN NI website.

Retention of Evidence

OCN NI has published guidance for centres on the retention of evidence. Details are provided in the OCN NI Centre Handbook and can be accessed via the OCN NI website.

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