



## Qualification Specification for:

### OCN NI Level 5 Certificate in Artificial Intelligence and Machine Learning Services

➤ Qualification No: 610/2590/2

## Qualification Regulation Information

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### OCN NI Level 5 Certificate in Artificial Intelligence and Machine Learning Services

Qualification Number: 610/2590/2

Operational start date: 24 April 2023  
Operational end date: 31 March 2028  
Certification end date: 31 March 2033

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 and the certification end date is the last date by which learners can 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.

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## Foreword

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

→ **OCN NI Level 5 Certificate in Artificial Intelligence and Machine Learning Services**

This specification sets out:

- Qualification features
- Centre requirements for delivering and assessing the qualification
- The structure and content of the qualification
- Unit details
- Assessment requirements for the qualification
- OCN NI's quality assurance arrangements for the qualification
- 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](http://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.

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## About Regulation

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### 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 1<sup>st</sup> 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

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### Sector Subject Area

6.1 ICT for practitioners

This qualification relates to the following National Occupational Standards:

TECIS805401 - [Develop and implement machine learning algorithms - National Occupational Standards \(ukstandards.org.uk\)](https://www.ukstandards.org.uk)

### Qualification Aim

The OCN NI Level 5 Certificate in Artificial Intelligence and Machine Learning Services qualification will enable learners to develop skills and knowledge on how to select and apply artificial intelligence (AI) and machine learning services to resolve business problems. Learners will also be able to label, build, train, and deploy a custom machine learning model.

### Qualification Objectives

The objectives of the OCN NI Level 5 Certificate in Artificial Intelligence and Machine Learning Services are to enable learners to understand how to label, build, train, and deploy a custom machine learning model.

The learner will also be able to understand:

- machine learning and AI
- how to implement a machine learning tool
- how to implement feature engineering processes
- how to implement machine learning model training, deployment and tuning

### Grading

Grading for this qualification is pass/fail.

### Qualification Target Group

The qualification is targeted at learners who wish to develop skills in artificial intelligence in order to enhance employment opportunities within the IT industry.

### Progression Opportunities

The OCN NI Level 5 Certificate in Artificial Intelligence and Machine Learning Services qualification enables progression into higher level qualifications in information technology or into employment.

### **Entry Requirements**

Learners must be at least 18 years old and have a level 3 qualification in information technology or related subjects or have relevant information technology experience.

### **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 this 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

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### Centre Recognition and Qualification Approval

New and existing OCN NI recognised centres must apply for and be granted approval to deliver the qualification 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
- Tutor
- Assessor
- Internal Verifier

\*Note: A person cannot be an internal verifier for their own assessments.

### Tutors

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

### Assessors

The qualification is assessed within the centre and is 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 to at least one level higher than the qualification
- have a minimum of one year's experience in the area they are assessing
- 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 centre 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 qualifications.

#### ***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

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### OCN NI Level 5 Certificate in Artificial Intelligence and Machine Learning Services

In order to achieve the qualification learners must complete the one unit - 13 credits.

Total Qualification Time (TQT) for this qualification: 130 hours  
 Guided Learning Hours (GLH) for this qualification: 64 hours

Unit Reference Number	OCN NI Unit Code	Unit Title	Credit Value	GLH	Level
<a href="#">F/650/6156</a>	CBG154	Artificial Intelligence and Machine Learning Services	13	64	Five

## Unit details

Title	Artificial Intelligence and Machine Learning Services
Level	Five
Credit Value	13
Guided Learning Hours (GLH)	64
OCN NI Unit Code	CBG154
Unit Reference No	F/650/6156
Learn Direct Code	CK51
<i>Unit purpose and aim(s):</i> This unit will enable the learner to understand how to select and apply Artificial Intelligence (AI) and machine learning services to resolve business problems. Learners will also be able to label, build, train, and deploy a custom machine learning model.	
Learning Outcomes	Assessment Criteria
1. Understand machine learning and AI.	1.1 Explain using examples what is meant by AI and machine learning including its use in addressing business problems. 1.2 Research and classify what is meant by the following: a) Natural Language Processing (NLP) b) reinforcement learning c) classical programming approaches d) machine learning approaches e) feasibility of using machine learning 1.3 Explain the machine learning process including the following: a) defining the business problem b) data preparation c) Iterative model training d) feature engineering e) model training f) evaluating and tuning models g) deployment 1.4 Research and evaluate given vendor machine learning tools for one vendor including the following: a) python tools and libraries b) frameworks and infrastructure c) deployment d) managed services 1.5 Evaluate the risks and challenges involved in implementing machine learning services including the following: a) data b) business c) users d) technology e) managed services f) existing models and services
2. Be able to implement a machine learning tool.	2.1 Explain how business objectives can be used to formulate a machine learning model to address the following: a) business problems and goals b) formulation of problems c) datasets 2.2 Critically evaluate methods available through a given machine learning vendor

	<p>that may be used for data collection and security including the following:</p> <ul style="list-style-type: none"> <li>a) data sources</li> <li>b) observations</li> <li>c) use of a domain expert</li> <li>d) storing data</li> <li>e) securing data</li> <li>f) identity access</li> <li>g) encryption</li> <li>h) auditing</li> </ul> <p>2.3 Research, select and use an appropriate vendor machine learning tool to implement a solution to address a given business problem.</p>
3. Be able to implement feature engineering processes.	<p>3.1 Critically evaluate the importance of data cleansing in feature engineering including the following:</p> <ul style="list-style-type: none"> <li>a) data types to be cleaned</li> <li>b) finding missing data</li> <li>c) planning for missing data</li> <li>d) how missing data may be inputted</li> </ul> <p>3.2 Research, select and use an appropriate vendor machine learning tool to implement encoding of categorial variables as part of the feature engineering process.</p>
4. Be able to implement machine learning model training, deployment and tuning.	<p>4.1 Use a given vendor application to implement the training of a machine learning model.</p> <p>4.2 Use a given vendor application to implement deployment of a machine learning model using a test dataset to perform a batch transformation.</p> <p>4.1 Use a given vendor application to implement the tuning of a machine learning model.</p>

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

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

## Quality Assurance of Centre Performance

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### 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 qualifications and to assure OCN NI of the maintenance of the integrity of the qualifications.

The External Verifier will review the delivery and assessment of the qualifications. 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 EV 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 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

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### 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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