Qualification Specification for:

OCN NI Level 4 Certificate in Software Programming
➤ **Qualification No: 610/1504/0**

Qualification Regulation Information

OCN NI Level 4 Certificate in Software Programming
Qualification Number: 610/1504/0

Operational start date: 15 September 2022
Operational end date: 31 August 2027
Certification end date: 31 August 2031

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.

OCN NI Contact Details

Open College Network Northern Ireland (OCN NI)
Sirius House
10 Heron Road
Belfast
BT3 9LE

Phone: 028 90463990
Web: **www.ocnni.org.uk**

Foreword

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

→ **OCN NI Level 4 Certificate in Software Programming**

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**

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:

NOS - Software Development

Qualification Aim
The OCN NI Level 4 Certificate in Software Programming qualification will enable the learner to develop skills in software programming.

Qualification Objectives
The objectives of the OCN NI Level 4 Certificate in Software Programming are to enable learners to be able to:

- develop algorithms and understand data structures
- use software design tools and techniques
- use computer programming tools and techniques
- develop and implement a test plan and record test outcomes

Grading
Grading for this qualification is pass/fail.

Qualification Target Group
The qualification is targeted at learners who wish to develop skills in software programming in order to enhance employment opportunities within the IT industry.

Progression Opportunities
The OCN NI Level 4 Certificate in Software Programming qualification enables progression into higher level qualifications in software development and information technology or into employment.

Entry Requirements
Learners must be at least 18 years old and have a level 3 qualification.

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

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 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 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

The learner must successfully complete the one unit – 20 credits.

Total Qualification Time (TQT) for this qualification: 200 hours
Guided Learning Hours (GLH) for this qualification: 120 hours

Unit Reference Number	OCN NI Unit Code	Unit Title	Credit Value	GLH	Level
D/650/4184	CBG044	Software Programming	20	120	Four

Unit Details

Title	Software Programming
Level	Four
Credit Value	20
Guided Learning Hours (GLH)	120
OCN NI Unit Code	CBG044
Unit Reference No	D/650/4184

Unit purpose and aim(s): This unit will enable the learner to understand software programming and the use of integrated development environment (IDE) tools that will facilitate software development.

Learning Outcomes	Assessment Criteria
1. Understand data structures.	1.1. Critically compare common data structures used in software development.
2. Be able to develop algorithms.	2.1. Explain what is meant by an algorithm. 2.2. Develop algorithms for given specifications.
3. Be able to use software design tools and techniques.	3.1. Explain using examples what is meant by the following in relation to industry standard software design: a) program design and quality b) readability c) maintainability d) efficiency e) user-friendliness f) re-usability 3.2. Develop designs using software design tools and techniques including use of pseudo-code and stepwise refinement.
4. Be able to use computer programming tools and techniques.	4.1. Develop code designs using appropriate programming languages and IDE tools. 4.2. Develop a computer program to industry standards identified in AC 3.1 to meet a given specification including the following features: a) syntax and semantics of language b) variables and data types c) input and output of data d) basic arithmetic and string operators e) string formatting f) arrays g) program control structures h) conditional operators i) sequence, selection and iteration j) functions, parameters and return types k) variable scope
5. Be able to develop and implement a test plan and record test outcomes.	5.1. Develop and implement a test plan including: a) initial coding phase b) unit testing 5.2. Record outcomes of test plan implemented in AC 5.1 in an industry standard format.

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

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 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

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.

OCN NI Level 4 Certificate in Software Programming
Qualification Number: 610/1504/0

Operational start date: 15 September 2022
Operational end date: 31 August 2027
Certification end date: 31 August 2031

Open College Network Northern Ireland (OCN NI)
Sirius House
10 Heron Road
Belfast
BT3 9LE

Phone: 028 90463990
Web: **www.ocnni.org.uk**