Dearbhú Cáilíochta
agus Cáilíochtaí Éireann
Quality and
Qualifications Ireland

# QQI AWARDS STANDARDS.

## ICT

February 2024

# Foreword

**The Qualifications and Quality Assurance Act 2012 requires QQI to 'determine the standards of knowledge, skill or competence to be acquired, and where appropriate, demonstrated, by a learner before an award may be made by the Authority'. QQI award standards are based on the level indicators and award type descriptors of the National Framework of Qualifications (NFQ) and are governed by QQI Policy for the Determination of Award Standards.**

Based on systematic engagement with subject matter expertise and public consultation, award standards for certain broad fields of learning were developed for QQI awards at level 1-4 on the NFQ. These standards represent an elaboration of the generic descriptors of the NFQ. They should facilitate experts in particular fields of learning to create the link between their programmes' intended learning outcomes and the NFQ. Each award standard is cumulative, the statements of knowledge, skill and competence at NFQ levels 2, 3 and 4, build on the attainment of standards at lower levels, which are not necessarily reproduced at the higher level(s). The implementation and use of these standards is subject to QQI Policy and Criteria for the Validation of Programmes and QQI Policy for the Making of Awards. Whenever an award standard changes, programmes must be updated and validated against the new standards.

These standards are not programme specifications. It is through these, however, that the relationship between a programme, its component parts and the NFQ should be evident. The standards are a reference point and a point of comparison against which individual programmes may be justified.

They are intended to provide general guidance for articulating the learning outcomes associated with a particular field of learning.
In designing programmes, providers must take cognisance of the standards for specific fields of learning where they generally relate to the programme being developed. It is, however, recognised that there is a significant growth in multi-disciplinary/inter-disciplinary programmes; there are emerging fields of learning; and in addition, within each field there is the vast spectrum of programmes possible based on a wide range of purpose.  In this context, it is not possible to have a standard, or multiple standards, that cater for the complete range of programmes possible. It is therefore expected that the standards for specific fields of learning will be used as reference points for the design of programmes. In designing programmes, providers can draw from more than one standard.

In drafting the standards every effort has been made to ensure that they will provide for flexibility and variety in the design of programmes and therefore encourage innovation within an overall agreed framework. It

is not expected that all programmes will include every learning outcome identified in a standard. It is, however, expected that many programmes will include learning outcomes that are not included in the relevant standard.

When designing a programme, each learning outcome in the standard should be considered. Where departure from these is necessary, it should be justified in the context of the specific orientation of the programme and other facts pertaining to it. Each programme provider should be able to demonstrate how the design and content of its own programmes has been informed by the standard.

The level descriptors of the Framework, the award type descriptors and consequently the standards for the specific fields of learning are divided into three different types of learning outcomes - knowledge, skill and competence. These strands are further subdivided into eight sub-strands. Each strand/sub-strand is important. The relative weighting of each strand in a programme will vary from programme to programme. The weighting will be determined by many factors, including for example, the practical nature of a programme, or otherwise.

Each strand/sub-strand should be addressed appropriately in every programme. Where a programme is multidisciplinary or interdisciplinary in nature, the use of more than one standard may be necessary. In such cases, the scope, depth and balance of knowledge, skill and competence should be attended to.

The titles of awards made by QQI on foot of these award standards shall be consistent with QQI Policy on the Making of Awards with an exception in the case of major awards where the named award stem shall have the following form: 'Level X Certificate in Lifelong Learning in' [specialisation].

These standards are determined by QQI under section 49(1) of the Qualifications (Education and Training) Act 2012.

Dearbhú Cáilíochta
agus Cáilíochtaí Éireann
Quality and
Qualifications Ireland

| ICT – BROAD AWARD STANDARDS FEBRUARY 2024 | | |
|---|---|---|
| **Purpose** | The knowledge, skill and competence acquired are reflective of **foundational** instruction.<br>This will encompass a moderately broad range of **general** principles, practices and tools commonly associated with information and communication technology.<br><br>These will be suited to the practice of these skills for personal use, societal participation and workplace application under **constant** direct supervision in a structured setting, or as preparation for further study in ICT. | The knowledge, skill and competence acquired are reflective of **post-foundational** instruction.<br><br>This will encompass a broad range of **specialised** principles, practices and tools commonly associated with information and communication technology.<br><br>These will be suited to the practice of these skills for personal use, societal participation and workplace application under **regular** supervision in a structured setting, or as preparation for further study in ICT. |

**Note: The indicators at each level build on the skills from the previous one.**
The outcomes indicated at the lowest level of the NFQ, Level 1, are brought forward to the next NFQ levels. This means we assume people acquire skills at each level that they take with them as they progress up the levels.

| NFQ | LEVEL 3 | LEVEL 4 |
|---|---|---|
| **KNOWLEDGE BREADTH** | Knowledge Moderately Broad in Range | Broad Range of Knowledge |
| | Learners will be able to:<br><br>Use **appropriate** terminology to provide a **basic** description of the purpose and operating principles for a moderately broad range of ICT components and processes. This may include demonstrating knowledge of:<br>• The basic components of a computer. This includes knowledge of the different parts of a computer, their functions, and how they work together **(fundamental** components, specifications, and common peripherals)<br>• Operating Systems **(primary** functions)<br>• Software Applications (sample applications, installation and use)<br>• Networking (wired communication between devices)<br>• The Internet (use of web browsers and search engines)<br>• The role of digital systems in society and the **workplace.** | Learners will be able to:<br><br>Use **industry-accepted** terminology to provide a **substantive** description of the purpose and operating principles for a broad range of ICT components and processes. This may include demonstrating knowledge of:<br>• The basic components of a computer. This includes knowledge of the different parts of a computer, their functions, and how they work together (e.g., **typical** components, specifications, and common and **specialist** peripherals)<br>• Operating Systems **(typical** functions, **security, and common problems/limitations)**<br>• Software Applications (sample applications, installation**/de-installation, configuration,** and use)<br>• **Programming (fundamentals of writing computer programmes)**<br>• Networking (wired and **wireless** communication for fixed, **portable and mobile devices)**<br>• The Internet (web browsers, search engines and **cloud services)**<br>• The role of **digitalisation** in society and the **implications for the future of the workplace.** |

| KNOWLEDGE KIND | Mainly concrete in reference and with some comprehension of relationship between knowledge elements | Mainly concrete in reference and with some elements of abstraction or theory |
|---|---|---|
| | Learners will be able to:<br><br>Demonstrate understanding of largely concrete ICT concepts and a basic awareness of the relationships between them.<br><br>The learner may demonstrate this by using appropriate terminology to describe:<br>• A range of roles and responsibilities associated with **established** ICT professions.<br>• The basic relationships between the different roles of **established** ICT professions.<br>• A range of best practices in ICT. | Learners will be able to:<br><br>Demonstrate knowledge of concrete and abstract concepts relevant to ICT and an awareness of the relationships and interdependencies between them.<br><br>The learner may demonstrate this by using appropriate terminology to describe:<br>• A range of roles and responsibilities associated with **current and some emerging** ICT professions.<br>• The relationships and **interdependencies** between the different roles of **current** ICT professions.<br>• Current and some emerging best practices in ICT. |
| | The learner may also demonstrate this by using appropriate terminology to provide a basic description of concepts and practices associated with cybersecurity and ethics in ICT. This may include demonstrating knowledge of:<br>• **Common** privacy/security threats associated with digital systems, the internet, artificial intelligence and social media.<br>• **Standard** applications and practices that safeguard privacy/security and protect their personal information and devices from cyber threats.<br>• **Basic** responsibility and safety considerations in the use of digital systems, the internet, artificial intelligence tools and social media. | The learner may demonstrate this by using **industry-accepted** terminology to provide a **substantive** description of concepts and practices associated with cybersecurity and ethics in ICT. This may include demonstrating knowledge of:<br>• **A broad range** of privacy/security threats associated with digital systems, the internet, artificial intelligence and social media.<br>• **Standard** and/or some specialist applications and practices that safeguard privacy/security and protect their personal information and devices from cyber threats.<br>• **A broad range** of responsibility and safety considerations in the use of digital systems, the internet, artificial intelligence tools and social media. |

| KNOW-HOW AND SKILL | Demonstrate a limited range of practical and cognitive skills and tools | Demonstrate a moderate range of practical and cognitive skills and tools |
|---|---|---|
| | The Learner will be able to:<br>• Complete **simple** ICT tasks, under supervision, in an instructional setting.<br>• Use observation, practical skills, and initiative to imitate described processes in workplace or vocational environments, **under supervision.**<br>• Articulate proposed or completed actions taken using **appropriate terminology.** | The Learner will be able to:<br>• Complete **routine** Information and Communication Technology tasks, **under guidance**, in **structured** settings.<br>• Use observation, practical skills, initiative, **creativity, and experience** to imitate and **extrapolate** described processes in workplace or vocational environments, **under guidance.**<br>• Articulate proposed or completed actions taken using **industry-accepted terms.** |
| **SELECTIVITY** | Select from a limited range of varied procedures and apply known solutions to a limited range of predictable problems | Select from a range of procedures and apply known solutions to a variety of predictable problems |
| | The Learner will be able to:<br>• Select from a **limited** range of specified procedures to apply known solutions to **a limited range** of predictable ICT problems.<br>• Use **basic** problem-solving skills to solve **predictable** ICT problems and to break down **somewhat more complex problems** into manageable parts and recognize patterns.<br>• Interpret **basic** data and information and **make connections** between this and associated decision-making or actions.<br>• Operate a computer and use basic, **specified** software applications. | The Learner will be able to:<br>• Select **appropriately** from a range of specified procedures to apply known solutions to solve **a variety** of predictable ICT problems.<br>• Use **emerging computational** thinking problem-solving skills to **break down relatively complex problems** into manageable parts, recognize patterns **and develop step-by-step solutions.**<br>• Interpret **relevant** data and information to **inform** associated decisions.<br>• Operate a computer and **install, configure** and use **a range of** basic software applications. |

| COMPETENCE | Act within a limited range of contexts | Act in familiar and unfamiliar contexts |
|---|---|---|
| | Learners will be able to:<br>• Apply ICT skills in specified educational, personal or societal context, **under supervision.**<br>• Apply ICT skills in structured work situations, **under supervision and with a high level of support.**<br>• Identify and suggest solutions for **familiar** ICT problems. | Learners will be able to:<br>• Apply ICT skills in familiar and unfamiliar educational, personal or societal contexts, **under guidance.**<br>• Apply ICT skills in structured work situations, **under supervision.**<br>• Identify and suggest **likely solutions and logical alternatives** for **familiar and some unfamiliar** ICT problems. |
| **ROLE** | **Act under direction with limited autonomy; function within familiar, homogenous groups** | **Act with considerable amount of responsibility and autonomy** |
| | Learners will be able to:<br>• Perform familiar tasks **under direction** in a **structured** ICT environment.<br>• Participate appropriately within **familiar and/or homogenous** educational, societal or workplace group settings.<br>• Act within acceptable norms for safe and responsible behaviour in **familiar** settings. | Learners will be able to:<br>• Perform familiar tasks **autonomously** in **a range of structured** ICT environments.<br>• Participate appropriately in both **familiar and unfamiliar or diverse** educational, societal or workplace group settings.<br>• Act within acceptable norms for safe and responsible behaviour in both **familiar and unfamiliar** settings. |

| LEARNING TO LEARN | Learn to learn within a managed environment | Learn to take responsibility for own learning within a supervised environment |
|---|---|---|
| | Learners will be able to:<br>• Engage appropriately with instructional personnel to acquire knowledge and skills.<br>• Exercise curiosity and willingness in the learning process.<br>• Seek assistance from instructional personnel and peers when necessary.<br>• Identify and describe their personal learning, under supervision and with a high level of support.<br>• Demonstrate the capacity to learn new knowledge and skills in the ICT area.<br>• Use basic ICT tools to support personal learning. | Learners will be able to:<br>• Engage appropriately with instructional personnel to acquire knowledge and skills.<br>• Exercise curiosity, willingness, **and initiative** in the learning process.<br>• Seek assistance from instructional personnel and peers when necessary.<br>• Take responsibility for personal learning, time management and study skills, under supervision.<br>• Demonstrate the capacity to apply knowledge and skills acquired in the ICT area.<br>• Use basic ICT tools and strategies, including prompt engineering, for personal learning.<br>• Take some responsibility for identifying and progressing opportunities for further learning. |

| INSIGHT | Assume limited responsibility for consistency of self understanding and behaviour | Assume partial responsibility for consistency of self understanding and behaviour |
|---|---|---|
| | Learners will be able to:<br>• Process and respond to feedback from instructors and peers.<br>• Recognise and value own personal contribution.<br>• **Identify** behaviours associated with **responsible digital citizenship in ICT,** including how to use technology in a safe, ethical, and responsible manner.<br>• Identify that sources of information and data vary in reliability and accuracy, recognising the importance of this for decision-making. | Learners will be able to:<br>• Accept feedback from instructional personnel and peers and apply learning from feedback to future tasks.<br>• Recognise, reflect on and value own personal contribution.<br>• **Demonstrate** behaviours associated with **responsible digital citizenship in ICT,** using technology in a safe ethical and responsible manner.<br>• Use basic strategies for evaluating the reliability and accuracy of information and data to inform decision-making. |

Dearbhú Cáilíochta
agus Cáilíochtaí Éireann
Quality and
Qualifications Ireland