



National 3  
Course  
Specification



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# National 3 Computing Science Course Specification (C716 73)

**Valid from August 2013**

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Please refer to the note of changes at the end of this Course Specification for details of changes from previous version (where applicable).

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## Course outline

**Course title:** National 3 Computing Science

**SCQF:** level 3 (18 SCQF credit points)

**Course code:** C716 73

### Mandatory Units

<b>H21X 73</b>	<b>Building Digital Solutions (National 3)</b>	<b>9 SCQF credit points</b>
<b>H222 73</b>	<b>Information Solutions (National 3)</b>	<b>9 SCQF credit points</b>

### Recommended entry

Entry to this Course is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by the following or equivalent qualifications and/or experience:

- ◆ National 2 Information and Communications Technology

In terms of prior learning and experience, relevant experiences and outcomes may also provide an appropriate basis for doing this Course.

### Progression

This Course or its Units may provide progression to:

- ◆ other qualifications in Computing Science or related areas
- ◆ further study, employment and/or training

Further details are provided in the Rationale section.

### Equality and inclusion

This Course Specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence. For further information, please refer to the *Course Support Notes*.

## **Rationale**

All new and revised National Courses reflect Curriculum for Excellence values, purposes and principles. They offer flexibility, provide more time for learning, more focus on skills and applying learning, and scope for personalisation and choice.

In this Course, and its component Units, there will be an emphasis on skills development and the application of those skills. Assessment approaches will be proportionate, fit for purpose and will promote best practice, enabling learners to achieve the highest standards they can.

This Course provides learners with opportunities to continue to acquire and develop the attributes and capabilities of the four capacities as well as skills for learning, skills for life and skills for work.

All Courses provide opportunities for learners to develop breadth, challenge and application, but the focus and balance of the assessment will be appropriate for the subject area.

## **Relationship between the Course and Curriculum for Excellence values, purposes and principles**

The Course provides an understanding of the technologies that underpin our modern digital world and develops transferable skills. It brings together elements of technology, science and creative digital media and has wide-ranging social implications providing an excellent opportunity for cross-curricular learning.

At this level, the Course will cover a common core of basic concepts which underpin the study of computing science, and provide insight into the challenge, excitement and reward to be found in these areas.

The Course encourages learners to become successful, responsible and creative in their use of technologies and to continue to acquire and develop the attributes and capabilities of the four capacities, including: creativity, flexibility and adaptability; enthusiasm and a willingness to learn; perseverance, independence and resilience; responsibility and reliability; and confidence and enterprise.

The Course provides progression mainly from the experiences and outcomes in computing science and in technological developments in society.

## **Purpose and aims of the Course**

The purpose of the Course is to develop learners' knowledge of the technological world and to develop their skills in developing computer-based solutions to problems. Computing science is vital to everyday life; it shapes the world in which we live and its future. Computing professionals play key roles in meeting the needs of society today and for the future, in fields which include science, communications, entertainment, education, business and industry.

The aims of the Course are to enable learners to:

- ◆ introduce and develop aspects of computational thinking in a range of contexts
- ◆ develop knowledge and understanding of basic facts and ideas in computing science
- ◆ develop skills and knowledge in software and application-based development tools
- ◆ apply skills and knowledge to develop and implement simple digital solutions

## **Information about typical learners who might do the Course**

The Course is designed for learners who want to learn more about the technological world around them and become skilled in building digital solutions using a variety of software applications.

Learners will develop and broaden their technological experience through an increasing awareness of contemporary technologies. They will also develop a range of transferable skills for learning, skills for life and skills for work, opening up a wide range of study opportunities.

Course activities also provide opportunities for learners to enhance generic and transferable skills in planning and organising, working independently and collaboratively, decision making, research, communication and self- and peer-evaluation, in a range of contexts.

The Course is also suitable for any learner who wants to progress to higher levels of study in computing-related subjects.

# Course structure and conditions of award

## Course structure

The Course enables learners to develop, across contemporary contexts, a range of skills, including problem-solving, creating and implementing digital solutions.

The Course also enables learners to develop knowledge and understanding of key concepts and processes and the ability to apply this to a variety of problems.

Units are statements of standards for assessment and not programmes of learning and teaching. They can be delivered in a number of ways.

Units can be taught sequentially or in parallel to each other. However, learning and teaching approaches should provide opportunities to integrate skills where possible.

Each of the component Units of the Course is designed to provide progression to the related Unit at National 4.

### **Building Digital Solutions (National 3)**

In this Unit, learners will become familiar with the features of development software to build digital solutions such as computer games, animation and other applications.

### **Information Solutions (National 3)**

In this Unit, learners will become familiar with a range of applications, such as databases and web page creation software, or a range of web-based tools, such as blogs, wikis and online documents, to create, share and locate information.

## Conditions of award

To achieve the National 3 Computing Science Course, learners must pass all of the required Units. The required Units are shown in the Course outline section.

National 3 Courses are not graded.

## Skills, knowledge and understanding

Full skills, knowledge and understanding for the Course are given in the *Course Support Notes*. A broad overview of the subject skills, knowledge and understanding that will be covered in the Course is given in this section.

This includes:

- ◆ applying, with guidance, aspects of computational thinking across a range of simple contexts
- ◆ analysing, with guidance, simple problems within computing science across a range of contemporary contexts
- ◆ creating, implementing and testing, with guidance, digital solutions to simple problems across a range of contemporary contexts
- ◆ using a range of tools and applications to create, share and locate information
- ◆ basic knowledge of key facts and ideas related to building digital solutions and information solutions

Skills, knowledge and understanding to be included in the Course will be appropriate to the SCQF level of the Course. The SCQF level descriptors give further information on characteristics and expected performance at each SCQF level ([www.sqa.org.uk/scqf](http://www.sqa.org.uk/scqf)).

# Assessment

Further information about assessment for the Course is included in the *Course Support Notes*.

## Unit assessment

All Units are internally assessed against the requirements shown in the *Unit Specification*.

They can be assessed on an individual Unit basis or by using other approaches which combine the assessment for more than one Unit.

They will be assessed on a pass/fail basis within centres. SQA will provide rigorous external quality assurance, including external verification, to ensure assessment judgments are consistent and meet national standards.

The assessment of the Units in this Course will be as follows.

### **Building Digital Solutions (National 3)**

For this Unit, learners will be required to provide evidence of:

- ◆ skills in producing solutions in different software environments
- ◆ knowledge of the tools and applications used to produce solutions

### **Information Solutions (National 3)**

For this Unit, learners will be required to provide evidence of:

- ◆ skills in creating, sharing and locating information using a range of applications
- ◆ knowledge of the applications used to create, share and locate this information

# Development of skills for learning, skills for life and skills for work

It is expected that learners will develop broad, generic skills through this Course. The skills that learners will be expected to improve on and develop through the Course are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and drawn from the main skills areas listed below. These must be built into the Course where there are appropriate opportunities.

## **2 Numeracy**

2.3 Information handling

## **4 Employability, enterprise and citizenship**

4.2 Information and communication technology (ICT)

## **5 Thinking skills**

5.3 Applying

Amplification of these skills is given in SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work*. The level of these skills will be appropriate to the level of the Course. Further information on building in skills for learning, skills for life and skills for work for the Course is given in the *Course Support Notes*.

# Administrative information

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## History of changes to National Course Specification

Course details	Version	Description of change	Authorised by	Date

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Note: You are advised to check SQA's website ([www.sqa.org.uk](http://www.sqa.org.uk)) to ensure you are using the most up-to-date version of the Course Specification.

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