Optional units

Unit code	Unit title	SQA credit	SCQF credit points	SCQF level
J693 47	Artificial Intelligence	1	8	7
J68W 47	Big Data	1	8	7
J68X 47	Blockchain	1	8	7
J68Y 47	Cloud Computing	2	16	7
J7S2 47	Computer Programming: Applied Mathematics	1	8	7
J68L 47	Computer Science	2	16	7
J89A 47	Client Operating Systems	2	16	7
J68N 47	Cyber Security	2	16	7
J690 47	Data Flow	1	8	7
J68R 47	Data Science	2	16	7
J8FK 47	Database Design Fundamentals	1	8	7
J691 47	Emerging Technologies and Experiences	1	8	7
J692 47	Internet of Things	1	8	7
J68S 47	Network Infrastructure	2	16	7
J68V 47	Software Development	2	16	7
J6BB 47	Web Development	2	16	7
J7N3 47	Work-based Learning	3	24	7

The framework provides an opportunity for learners to progress their learning in a specific sub-discipline, such as:

- cyber security
- data science
- network infrastructure
- software development
- web development

Learners who intend to progress to a Higher National Diploma (HND) in a specific domain or enter an identified job market could benefit by selecting options that would facilitate their progression. For example, a learner who intends to progress to HND Software Development could choose the software development units (Software Development at SCQF level 7 and Software Development at SCQF level 8), comprising 5 credits, leaving a free choice for the remaining 3 credits.

Learners may prefer to keep their options open by selecting from the broad range of options in the framework.

See the ‘Approaches to delivery and assessment’ section for more information.

Aims of the qualification

HNC Computing aims to equip learners with the knowledge, understanding and skills they need to pursue a professional career in the IT sector. Learners evidence competence in the fundamental technologies and techniques of computing and an understanding of the issues involved in their application. They demonstrate skills in communication, problem solving, teamwork and other relevant meta-skills.

The qualification has both general and specific aims. The general aims are described in broad terms that relate to any vocational field. The specific aims relate directly to the subject of computing.

General aims

The general aims of the qualification are to:

1 develop understanding of current trends in computing and their application for the benefit of society and the economy
2 develop an understanding of the principles and concepts that underpin a specialist discipline
3 provide practical experience in the application of theory to a range of real-world contexts
4 develop a range of meta-skills that enable individuals to thrive while working and living in a rapidly changing and increasingly unpredictable world
5 develop awareness of legal and ethical obligations, including those relating to diversity, inclusion and sustainability
6 develop academic competencies that enable continuous lifelong learning and professional development
7 enable progression through the SCQF, including progression to degree-level study

Specific aims

The specific aims of the qualification are to:

1 develop understanding of current advances in a specialist discipline and how these provide benefit for society and the economy
2 develop a range of specialist knowledge and skills in computing and its applications, including its hardware and software components
3 develop competence in comparing the specifications for computing hardware systems and their software
4 develop competence in the use of computer systems in a safe, ethical and effective manner while protecting the environment
5 prepare for employment in the design, implementation and testing of computing solutions
6 build confidence and competence in communicating computing ideas and solutions to stakeholders
7 enable progression to further study of computing or related topics at SCQF level 8 and beyond

Qualification structure

HNC Computing is structured to meet the requirements of the Next Generation Higher National (NextGen: HN) framework, incorporating the mandatory common core unit and a sector-specific skills unit. Computing Foundations at SCQF level 7 (24 SCQF points) introduces the essential knowledge and skills required for learners to progress to further study in computing and IT. Professional Practice in Computing at SCQF level 7 (32 SCQF points) has a significant project element. This supports the development of meta-skills, such as team working, communication and self-management.

Centres are free to choose the remaining 8 SQA credits (64 SCQF points), taking into account the possible progression routes for learners, local expertise and learner interests.

Who is this qualification for?

This qualification is suitable for learners who work in, or have ambitions of working in, IT, computing and related digital industries.

As a foundational award, it is particularly relevant for learners progressing from secondary school and aiming to progress to more advanced qualifications in computing specialisms. It is also well-suited to individuals seeking to change career into roles that require a sound understanding of the concepts and technologies that underpin computing applications.

The qualification is also suited to individuals who require re-skilling or up-skilling through government schemes for economic recovery and support of priority sectors.

Recommended entry	**Progression**
Entry to this qualification is at the discretion of your centre. Learners would benefit from having attained the skills, knowledge, and understanding required by one or more of the following, or equivalent qualifications and/or experience: ♦ any two relevant SQA National Courses at SCQF level 6, together with three passes at SCQF level 5 in appropriate subjects ♦ an SQA National Certificate in Computing or IT at SCQF level 6 ♦ an SQA National Progression Award (NPA) in Computing or IT at SCQF level 6, together with 3 passes at SCQF level 5 in appropriate subjects ♦ a Scottish Vocational Qualification (SVQ) at level 2 or 3 in IT Professionals or other relevant subjects Different combinations of relevant SQA National Qualification Qualifications, National Courses, Vocational Qualifications and equivalent qualifications from other awarding bodies may also be acceptable, including vendor qualifications at an appropriate level. Mature learners with suitable work experience may be accepted for entry, provided the awarding centre believes that the learner is likely to benefit from carrying out the qualification.	Learners can progress to further studies or employment. Learners can progress to one of the following qualifications: ♦ HND Computer Science ♦ HND Data Science ♦ HND Networking and Infrastructure ♦ HND Software Development ♦ Other HND awards ♦ BSc Computer Science or related disciplines Alternatively, learners could progress to employment in a technician-level role, such as junior software developer or technical support.

Recognising prior learning

SQA recognises that learners gain knowledge and skills through formal, non-formal, and informal learning contexts.

It is unlikely that a learner would have the appropriate prior learning and experience to meet all the requirements of a full qualification of HNC Computing.

You can find more information and guidance about the recognition of prior learning on SQA's website.

Articulation and/or progression

Successful learners have several options within SQA's Computing frameworks to which they can progress. These include HNDs in Software Development, Networking and Cloud Infrastructure, and Computer Science. There are other digital or IT-related awards for which this qualification would provide a suitable preparation. There are well-established articulation routes from HNC Computing to degree provision in computing subjects at Scottish universities, depending on the quality of the grade achieved and the number of places available.

Professional recognition

This qualification does not lead to professional recognition.

Credit transfer arrangements

Centres can make decisions about transferring credits. They can transfer credits if the subject-related content of the units is broadly equivalent. Centres should consider the currency of a learner's achievement before transferring credit.

Core Skills entry profile

The Core Skills entry profile provides a summary of the assessment activities that demonstrate the SCQF level of this qualification. This information can help identify learners that need additional support or those who should take an alternative level or learning programme.

Core Skill	Recommended SCQF entry profile	Associated assessment activities
Communication	5	Communication plays an important role in the computing and IT professions. These skills are further developed in the HNC.
Numeracy	5	Computing requires a good basic competence in dealing with numbers and data. These skills are further developed in the HNC.
Information and communication technology (ICT)	5	A basic competence in ICT skills, and confidence in their use, are central to computing and are developed to a significantly higher level in the HNC.
Problem solving	5	Problem solving is an essential skill for a computing professional and is further developed in this HNC.
Working with others	5	Computing professionals almost always work in a team, and this competence is further developed in the project work of the HNC.

Meta-skills

Meta-skills are higher-order skills that support the development of other skills and promote success in any context. They enable learners to respond to professional challenges and opportunities by reflecting on, developing, applying and adapting industry skills and sector knowledge.

Our new Higher National Qualifications are developed with meta-skills at their core. Meta-skills complement the industry- and sector-specific content of the qualifications. They provide a framework for learners to complete personal development aligned to professional practices.

Throughout the qualifications, learners develop meta-skills while studying industry and sector-specific content. You can integrate meta-skills into contextualised teaching activities and include them in integrated and holistic assessment approaches.

The 21st century skills and meta-skills learning, teaching and assessment model focuses on how we can use skills to respond to societal, economic and industry drivers and change. Meta-skills frameworks vary, but they share an approach that emphasises individualistic, context-based skills development with reflective practice and localised definitions.

Skills Development Scotland developed a model of meta-skills in response to the concept of Industry 4.0 (or the 'fourth industrial revolution'). In this model, they identify 12 meta-skills that help learners adapt to changes to industry, job roles and society expected as a result of technological advances and global trends. Developing these meta-skills supports learners as they prepare for a constantly evolving future.

The 12 meta-skills are grouped into three categories: self-management, social intelligence, and innovation.

Self-management	Social intelligence	Innovation
Focusing	Communicating	Curiosity
Integrity	Feeling	Creativity
Adapting	Collaborating	Sense-making
Initiative	Leading	Critical thinking

Adapted from: Skills 4.0: A skills model to drive Scotland's future, Centre for Work-based Learning in Scotland, (2018).

You should:

- make learners aware that meta-skills are generic and transferable across many different contexts
- support learners to focus on the meta-skills that they find most relevant by encouraging an individualised, active learning approach that relates to the industry and sector contexts of the qualification
- help learners to understand key meta-skills for their industry or sector and any other personally important meta-skills, and set development goals for these
- encourage learners to focus on reflective practice

None of the meta-skills are mandatory.

Learning and teaching

You can introduce meta-skills to learners as tools they can use in response to real-world challenges and opportunities. At SCQF level 7 and 8, you should use terminology from the Skills 4.0 model, but it is important that you develop a shared understanding with learners about meta-skills and what they mean to them, both individually and in the context of coursework, projects and sectors.

You should embed meta-skills in learning and project tasks as a context for planning, practice, and reflection. You should encourage learners to be self-aware, set active goals and monitor their progress.

The process of developing meta-skills is not linear and you should make learners active participants in their learning. At the start of the process, you should introduce meta-skills to learners and explore the concept of self-assessment with them. You should set goals and make development and evaluation plans together. The process should become cyclical, with reflective practice informing new self-awareness, goal setting and review.

Many traditional learning and teaching activities used to develop industry or sector-specific skills, knowledge and understanding also support the development of meta-skills. You can map these in course materials and resources and during learning.

Meta-skills are central to successfully engaging with and completing assignments and projects. You should encourage learners to plan how they will use and develop meta-skills in their coursework and to reflect on their success and future goals.

The role of the coach, mentor or facilitator is key to help learners understand, develop and reflect on their own meta-skills and those central to course activities, assessment projects and their target industry or sector. You and any employer partners or guest speakers could guide learners by taking on a coaching and mentoring role.

In this role, you should introduce learners to the fundamentals of reflective practice. You could use several models of reflective practice. You do not need to use a theoretical perspective. Any reference to these models should support learners' understanding of the nature and value of reflective practice in self-understanding and making change.

Introducing reflective practice can support your learners' personal development and goal setting. Frequent formative peer-to-peer, assessor, client (if appropriate) and group reflection activity can support learners through reflective practice.

Learners can focus on any meta-skills appropriate to them and their context. However, learning and teaching should also facilitate individual development. Learners have individual strengths and areas for development, and they do not have to reach a particular level in relation to meta-skills. Coursework and projects provide the context for development appropriate to the SCQF level. Within these contexts, the process of development is important. You should create a clear learning plan with each learner to provide evidence of their development.

You can create descriptions of abilities and skills that relate to meta-skills with your learners. These can come from self-profiling, exploring the industry and sector, and discussion with peers and employers. You should consider the meta-skills needed to complete coursework and meet personal goals to set a context for reflection.

Exploring learning and working styles, personality traits and preferences, personal profiling and self-assessment tools can help learners to develop an understanding of their strengths and areas for development.

You can use case studies and scenario-based activities to demonstrate the value of meta-skills and how they can be applied. You can provide opportunities for peer reflection. A group of learners could share experiences and reflections about how to apply meta-skills in the context of their coursework. You could adopt the role of facilitator to draw learners' attention to situations where meta-skills were or could have been applied.

Reflective discussions can focus on how and where meta-skills are being developed. Your discussions with learners could include positive recognition and guidance on future development based on previous performance. As learners progress, you could introduce industry content that requires skills like problem recognition and problem solving, both of which combine multiple meta-skills.

You can deliver the knowledge and skills for practical aspects of projects in sequence. However, learners benefit from learning and teaching that integrates meta-skills with project planning and development. This approach supports learners to engage in reflective practice throughout the project and develops their self-awareness and an appreciation for continuous learning. It also maximises your opportunities to support, coach and mentor learners through their projects.

Learning for Sustainability

Context

The UN 2030 Agenda for Sustainable Development, adopted by the UK in 2015, has shaped the development of internal and national sustainability policy. It sets out the United Nations Sustainable Development Goals (SDGs), which are central to the Scottish Government's National Performance Framework. Learning for Sustainability (LfS) is a commitment to embedding the SDGs in Scottish education.

In line with this, SQA is committed to incorporating the skills, knowledge, understanding and values of LfS within all new and revised qualifications.

LfS combines:

- education for sustainable development (ESD)
- global citizenship
- outdoor learning

ESD is the internationally used term for sustainability education. LfS has a broader remit; however, the terms are largely interchangeable. ESD tends to be used by colleges and universities, while LfS is usually used in schools. Both focus on a broad range of social, economic and environmental themes and approaches across all levels of education. SQA uses LfS as an umbrella term.

LfS is designed to nurture a generation of learners who know the value of the natural world and are committed to the principles of social justice, human rights, global citizenship, democratic participation and living within the ecological limits of the planet. It aims to respond to global challenges by developing learners' skills, knowledge, understanding and values relating to sustainability so they can interact with the world in a socially responsible way.

LfS is more than the sum of its parts; it is about building learners' capacity to deal with the unpredictable challenges facing our rapidly changing world. It encourages transformational change through learning, by which learners are able to critically analyse, communicate and collaborate on complex social, environmental and economic challenges. This gives learners increased confidence, opportunities to develop a range of meta-skills, and enhanced motivation and readiness to learn.

Learning for Sustainability in Next Generation Higher National Qualifications

Next Generation Higher National (NextGen: HN) qualifications have been developed with sustainability as a core component.

All NextGen: HN learners should exit their qualification with:

- a general understanding of sustainability and the SDGs
- an understanding of subject-specific sustainability issues, how these relate to the SDGs, and potential improvements
- the confidence to apply their knowledge and skills in the next stage of their lives

Central to these aims is a need for familiarity with both the SDGs and the concept of sustainability (which is the need to ensure a balance between economic growth, environmental stewardship and social well-being). Knowledge and understanding of current industry practices and behaviours, and consideration of how these could be made more sustainable and contribute towards the SDGs, are integral in developing young people to be responsible and empowered citizens who are able to contribute to building a socially just, sustainable and equitable society.

With this in mind, sustainability is embedded as an outcome in Professional Practice in Computing.

By completing this outcome, learners develop skills, including the abilities to:

- assess their own knowledge and understanding of sustainability and the SDGs
- review unit content against the SDGs to identify a sustainability-related issue
- apply knowledge and understanding of sustainability and the SDGs to propose improvements

Any of the SDGs can be covered; there are none that are mandatory.

Digital technologies and sustainability

The rise of digital technologies has an increasing impact on our lives, such as:

- fast and secure internet
- online access to knowledge and resources
- cloud computing services
- the Internet of Things (IoT)
- artificial intelligence
- blockchain

They enable us to:

- connect and communicate
- monitor and track
- analyse huge quantities of data and make predictions
- augment our human abilities
- manage processes autonomously

SQA's courses in computing and digital technologies should enable learners to gain awareness of the impacts of the digital technologies industry in relation to global sustainability. Learners should understand that processes in the production of digital devices consume rare earth metals, while modern consumer economies result in increasing digital waste. The increasing use of cloud computing services also leads to high energy consumption in the centres that support these services.

Learners on SQA's computing programmes should also understand the challenges of gender imbalance in many aspects of employment in the industry, particularly in highly technical roles, such as network engineering and cyber security.

However, these challenges are well understood within the industry and significant steps have been taken to address them. Further, digital technologies themselves contribute to the improvement of sustainability and progression towards net zero in carbon and waste. Using computation to drive artificial intelligence, and networking to enhance communications, digital technologies provide the tools required to address the challenges of the SDGs.

When you deliver SQA's programmes in aspects of computing and digital technologies, you should expose learners to the challenges raised by the increasing use of these technologies, and the significant contribution that they make towards progress in achieving the SDGs.

Digital technologies and SDGs

The digital technologies industry contributes especially to SDG 9: helping to build resilient infrastructure — promoting inclusive and sustainable industrialisation, and fostering innovation. Efficient and affordable ICT infrastructure and services help countries to engage in the digital economy and boost their economic competitiveness and well-being.

ICTs provide the means to deliver high-quality goods and services in health care, education, finance, commerce, governance, agriculture, and other vital areas. They can help to reduce poverty and hunger, boost health, create new jobs, help mitigate climate change, improve energy efficiency, and make cities and communities more sustainable.

Here are examples of how digital technologies contribute in a significant manner to the fulfilment of the SDGs:

- SDG 1: No poverty — Access to digital financial services has been proven to help lift people out of poverty.
- SDG 2: Zero hunger — Farmers can increase crop yields and reduce energy use through data-driven and ICT-enabled agricultural practices.

- SDG 3: Good health and well-being — Digital health applications, such as telemedicine and remote medical imaging, support direct patient interactions to populations that are remote from cities.
- SDG 4: Quality education — Digital learning and teaching are enabling young people to access education and training that gives them skills to participate in a 21st century workforce.
- SDG 5: Gender equality — While wide gender gaps in the use of digital technologies still exist in many world regions, they have been narrowed in the developing world through investment in initiatives that promote careers in ICT to women.
- SDG 7: Affordable and clean energy — The increasing use of digital technologies contributes to emissions of the various greenhouse gases. While cloud computing centres are significantly large consumers of energy, their operators are actively incorporating solar, wind and other renewable sources. Also, the replacement of on-premises computing capacity with virtualised cloud services has significantly reduced the energy used for computing applications and networks. The digital technology industry has established stringent standards for energy-efficiency in devices.
- SDG 10: Reduced inequalities — By providing access to technologies and knowledge to disadvantaged communities and countries, digital technologies provide opportunities to reduce inequalities.
- SDG 12: Responsible consumption and production — The continued growth of digital technology and its devices and infrastructure gives rise to increased e-waste from electronic and electrical equipment. The digital technologies sector recognises this unwelcome consequence of its activities and has invested in initiatives such as the Global e-Sustainability Initiative (GeSI), which provides frameworks to monitor and control its contribution to e-waste.
- SDG 14: Life below water and SDG 15: Life on land — The use of remote sensor networks (Internet of Things) and imaging technologies has enabled the monitoring of endangered species and tracking of wildlife populations.
- SDG 16: Peace, justice and strong institutions — The introduction of digital access to government information and services helps to improve the relationship between citizens and the state and improve the efficiency of government services.

Grading

Please see the Grading Pack for this qualification for more information on grading.

Learners who pass NextGen: HN Qualifications receive one of the following grade outcomes for the qualification as a whole:

- Achieved with Distinction
- Achieved with Merit
- Achieved

You assess and judge each learner's performance across the key aspects of the qualification to determine their whole qualification grade. You must align judgements with the whole qualification grade descriptors, which are:

Achieved with Distinction

This candidate consistently demonstrates outstanding knowledge, understanding and application of skills. Thinking and working independently to an exceptional standard, they apply excellent judgement and creative problem-solving skills. They achieve or exceed agreed aims by confidently applying an extensive range of meta-skills and working very effectively with colleagues and peers.

Achieved with Merit

This candidate demonstrates an excellent level of knowledge, understanding and application of skills. Thinking and working independently to a high standard, they demonstrate good judgement and effective problem-solving skills. They achieve agreed aims by applying a broad range of meta-skills and working effectively with colleagues and peers.

Achieved

This candidate demonstrates thorough knowledge, understanding and application of skills. They think and work independently and use their judgement to find solutions to problems. They achieve agreed aims by applying a range of meta-skills and working well with colleagues and peers.

Successful learners receive their grade, along with the grade descriptor text, on their commemorative certificate.

In addition, you assess individual units on a pass or fail basis. Each unit has evidence requirements that learners must achieve before you can consider them for whole qualification grading.

You make judgements about learners' quality of assessment evidence using a grading matrix based on important criteria in the qualification.

Grading and meta-skills

Meta-skills are a key part of the NextGen: HN Qualifications and learners develop them throughout the qualification. Competence in individual meta-skills is not assessed or graded. For example, the qualification does not judge the quality of learners' feeling or creativity, or their specific progress in any given meta-skill. Rather, it is the process of development the learner goes through that contributes to the whole qualification judgement. This means learners should provide evidence of planning, developing and reflecting on their meta-skills. The grading matrix includes criteria on meta-skills, which you should use to support this judgement. See the NextGen: HN Meta-skills, Outcome and Assessment Guidance document for support with assessing meta-skills.

How the qualification meets employer needs

This qualification is designed in collaboration with employers to meet the sector need. The following tables show how the qualification can benefit employers by producing learners with the necessary skill set.

The first table shows how units map to the aims of the qualification. The second table shows how the units map to National Occupational Standards and/or trade or professional body requirements. The third table shows the significant opportunities that the qualification provides for learners to develop more generic skills and meta-skills. The final table shows the assessment strategy for the qualification.

Mapping qualification aims to units: general aims

Key: Aim is relevant to unit (X) Aim is not relevant to unit (—)

Unit code	Unit title	Aim 1	Aim 2	Aim 3	Aim 4	Aim 5	Aim 6	Aim 7
J693 47	Artificial Intelligence	X	X	X	X	X	X	X
J68W 47	Big Data	X	X	X	X	X	X	X
J68X 47	Blockchain	X	X	X	X	X	X	X
J89A 47	Client Operating Systems	—	X	X	X	X	X	X
J68Y 47	Cloud Computing	X	X	X	X	X	X	X
J7S2 47	Computer Programming: Applied Mathematics	—	X	—	—	—	X	X
J68L 47	Computer Science	X	X	X	X	X	X	X
J68N 47	Cyber Security	X	X	X	X	X	X	X
J690 47	Data Flow	X	X	X	X	X	X	X
J68R 47	Data Science	X	X	X	X	X	X	X
J8FK 47	Database Design Fundamentals	X	X	X	X	X	X	X
J893 47	Computing Foundations	X	X	X	X	X	X	X
J691 47	Emerging Technologies and Experiences	X	X	X	X	X	X	X
J692 47	Internet of Things	X	X	X	X	X	X	X
J68S 47	Network Infrastructure	X	X	X	X	X	X	X
J6BD 47	Professional Practice in Computing	X	X	X	X	X	X	X

Unit code	Unit title	Aim 1	Aim 2	Aim 3	Aim 4	Aim 5	Aim 6	Aim 7
J68V 47	Software Development	X	X	X	X	X	X	X
J6BB 47	Web Development	X	X	X	X	X	X	X
J7N3 47	Work-based Learning	—	—	X	X	X	X	—

Mapping qualification aims to units: specific aims

Key: Aim is relevant to unit (X) Aim is not relevant to unit (—)

Unit code	Unit title	Aim 1	Aim 2	Aim 3	Aim 4	Aim 5	Aim 6	Aim 7
J693 47	Artificial Intelligence	X	X	X	X	X	X	X
J68W 47	Big Data	X	X	X	X	X	X	X
J68X 47	Blockchain	X	X	X	X	X	X	X
J89A 47	Client Operating Systems	X	X	—	X	X	—	X
J68Y 47	Cloud Computing	X	X	X	X	X	X	X
J7S2 47	Computer Programming: Applied Mathematics	—	—	—	—	X	—	X
J68L 47	Computer Science	X	X	X	X	X	X	X
J68N 47	Cyber Security	X	X	X	X	X	X	X
J690 47	Data Flow	X	X	X	X	X	X	X
J68R 47	Data Science	X	X	X	X	X	X	X
J8FK 47	Database Design Fundamentals	X	X	—	X	X	X	X

Unit code	Unit title	Aim 1	Aim 2	Aim 3	Aim 4	Aim 5	Aim 6	Aim 7
J893 47	Computing Foundations	X	X	X	X	X	X	X
J691 47	Emerging Technologies and Experiences	X	X	X	X	X	X	X
J692 47	Internet of Things	X	X	X	X	X	X	X
J68S 47	Network Infrastructure	X	X	X	X	X	X	X
J6BD 47	Professional Practice in Computing	X	X	X	X	X	X	X
J68V 47	Software Development	X	X	X	X	X	X	X
J6BB 47	Web Development	X	X	X	X	X	X	X
J7N3 47	Work-based Learning	—	—	—	X	X	X	—

Mapping National Occupational Standards (NOS) and/or trade or professional body requirements to units

The National Occupational Standards (NOS) for IT professionals is a collection of 437 individual NOS, organised into 11 IT NOS disciplines with 77 sub-disciplines. The framework for HNC Computing provides knowledge and skills relating to 26 of these sub-disciplines as set out in the following table.

The IT Professionals NOS are defined at 4 levels (levels 3 to 6) with level 3 being relevant to IT Professionals with 0 to 2 years' experience, able to work under supervision. The units listed here each correspond to the NOS at level 3. The units listed are all at SCQF level 7.

IT NOS discipline (level 3)	Sub-disciplines	Code
1 Digital Leadership	Personal Competencies	1.1
1 Digital Leadership	Business Competencies	1.2
2 Business Analysis and Change	Modelling Business and Data	2.1
3 Project Management	IT Project Management	3.1
4 Architecture, Analysis and Design	Systems Analysis	4.1
4 Architecture, Analysis and Design	Data Analysis	4.2
4 Architecture, Analysis and Design	HCI Design	4.3
4 Architecture, Analysis and Design	Data Design	4.4
5 Solution Development	Software Development	5.1
5 Solution Development	IT Solution Testing	5.2
5 Solution Development	IT Technology Systems Installation	5.3
5 Solution Development	User-centred Development	5.4
6 Cyber Security	Information Security Management	6.1
6 Cyber Security	Risk Assessment and Management	6.2
6 Cyber Security	Security Testing	6.3
6 Cyber Security	Threat Intelligence	6.4
7 Data Science Data Management	Data Analysis	7.1
7 Data Science Data Management	Data Science	7.2
7 Data Science Data Management	Artificial Intelligence	7.3
7 Data Science Data Management	Machine Learning	7.4
8 Digital Content Management	Develop Mobile Apps	8.1
8 Digital Content Management	Web Analytics	8.2
8 Digital Content Management	Create and Publish Digital Content	8.3
9 IT Networks	Network Services Planning	9.1
9 IT Networks	Network Design	9.2
9 IT Networks	Network Implementation and Support	9.3

Mapping National Occupational Standards (NOS) and/or trade or professional body requirements to units

NOS sub-disciplines as coded above

Key: Aim is relevant to unit (X) Aim is not relevant to unit (—)

Unit code	Unit title	1.1	1.2	2.1	3.1	4.1	4.2	4.3	4.4	5.1	5.2	5.3	5.4
J693 47	Artificial Intelligence	—	—	—	—	—	—	—	—	—	—	—	—
J68W 47	Big Data	—	—	—	—	—	—	—	—	—	—	—	—
J68X 47	Blockchain	—	—	—	—	—	—	—	—	—	—	—	—
J89A 47	Client Operating Systems	X	—	—	—	—	—	—	—	—	—	X	—
J7S2 47	Computer Programming: Applied Mathematics	X	—	X	—	—	X	—	—	—	—	—	—
J68Y 47	Cloud Computing	—	—	—	—	—	—	—	—	—	—	—	—
J68L 47	Computer Science	—	—	—	—	X	—	—	—	X	X	—	—
J68N 47	Cyber Security	—	—	—	—	—	—	—	—	—	X	—	—
J690 47	Data Flow	—	—	X	—	X	—	—	—	—	—	—	—
J68R 47	Data Science	—	—	—	—	—	X	—	—	—	—	—	—
J8FK 47	Database Design Fundamentals	X	X	X	—	—	X	—	X	—	—	—	—
J893 47	Computing Foundations	X	—	X	—	—	X	—	—	X	—	X	—
J691 47	Emerging Technologies and Experiences	—	X	—	—	—	—	—	—	—	—	—	—
J692 47	Internet of Things	—	—	—	—	X	—	—	—	—	—	—	—
J68S 47	Network Infrastructure	—	—	—	—	—	—	—	—	—	X	X	—
J6BD 47	Professional Practice in Computing	—	X	—	X	—	—	—	—	—	X	—	—

Unit code	Unit title	1.1	1.2	2.1	3.1	4.1	4.2	4.3	4.4	5.1	5.2	5.3	5.4
J68V 47	Software Development	—	X	—	—	—	—	X	X	X	X	X	X
J6BB 47	Web Development	—	—	—	—	—	—	X	X	X	X	—	X
J7N3 47	Work-based Learning	—	X	X	—	—	—	—	—	—	—	—	—

Unit code	Unit title	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1	9.2	9.3
J693 47	Artificial Intelligence	—	—	—	—	—	—	X	X	—	—	—	—	—	—
J68W 47	Big Data	—	—	—	—	X	X	—	—	—	—	—	—	—	—
J68X 47	Blockchain	X	—	—	—	—	—	—	—	—	—	—	—	—	—
J89A 47	Client Operating Systems	—	—	—	—	—	—	—	—	—	—	—	—	—	—
J7S2 47	Computer Programming: Applied Mathematics	—	—	—	—	X	X	—	—	—	—	—	—	—	—
J68Y 47	Cloud Computing	—	—	—	—	—	X	—	—	—	X	—	X	X	X
J68L 47	Computer Science	—	—	—	—	—	—	—	—	—	—	X	—	—	—
J68N 47	Cyber Security	X	X	X	X	—	—	—	—	—	X	—	—	—	—
J690 47	Data Flow	—	—	—	—	—	—	—	—	—	—	—	—	X	—
J68R 47	Data Science	—	—	—	—	X	X	—	—	—	—	X	—	—	—
J8FK 47	Database Design Fundamentals	—	—	—	—	X	—	—	—	—	—	—	—	—	—
J893 47	Computing Foundations	X	—	—	—	X	—	X	—	—	—	X	—	—	—
J691 47	Emerging Technologies and Experiences	—	—	—	—	—	—	—	—	—	—	X	—	—	—
J692 47	Internet of Things	—	—	—	—	—	—	—	—	—	X	—	X	—	—
J68S 47	Network Infrastructure	—	—	—	—	—	—	—	—	—	X	—	X	X	X

Unit code	Unit title	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1	9.2	9.3
J6BD 47	Professional Practice in Computing	—	—	—	—	—	—	—	—	X	X	X	—	—	—
J68V 47	Software Development	—	—	—	—	—	—	—	—	X	—	X	—	—	—
J6BB 47	Web Development	—	—	—	—	—	—	—	—	X	X	X	—	—	—
J7N3 47	Work-based Learning	—	—	—	—	—	—	—	—	—	—	X	—	—	—

Mapping opportunities to develop meta-skills across the qualification

Self-management

Unit code	Unit title	Meta-skills
J6BD 47	Professional Practice in Computing	♦ Focusing ♦ Integrity ♦ Adapting ♦ Initiative
J7S2 47	Computer Programming: Applied Mathematics	♦ Focusing ♦ Adapting
J68L 47	Computer Science	♦ Focusing
J68V 47	Software Development	♦ Focusing
J68R 47	Data Science	♦ Focusing ♦ Initiative
J693 47	Artificial Intelligence	♦ Integrity
J68N 47	Cyber Security	♦ Integrity
J6BB 47	Web Development	♦ Adapting ♦ Initiative
J893 47	Computing Foundations	♦ Adapting
J7N3 47	Work-based Learning	♦ Focusing ♦ Integrity ♦ Adapting ♦ Initiative
J89A 47	Client Operating Systems	♦ Focusing ♦ Adapting
J8FK 47	Database Design Fundamentals	♦ Focusing ♦ Adapting ♦ Initiative

Social intelligence

Unit code	Unit title	Meta-skills
J6BB 47	Web Development	♦ Communication ♦ Feeling ♦ Collaborating ♦ Leading
J68V 47	Software Development	♦ Communication ♦ Collaborating ♦ Leading
J68R 47	Data Science	♦ Communication ♦ Leading
J68N 47	Cyber Security	♦ Collaborating
J89A 47	Client Operating Systems	♦ Communication
J8FK 47	Database Design Fundamentals	♦ Communication ♦ Leading
J7N3 47	Work-based Learning	♦ Communication ♦ Feeling ♦ Collaborating ♦ Leading

Innovation

Unit code	Unit title	Meta-skills
J7S2 47	Computer Programming: Applied Mathematics	♦ Sense-making ♦ Critical thinking
J68R 47	Data Science	♦ Curiosity ♦ Creativity ♦ Sense-making ♦ Critical thinking
J68W 47	Big Data	♦ Curiosity ♦ Sense-making
J6BB 47	Web Development	♦ Creativity
J68S 47	Network Infrastructure	♦ Creativity ♦ Critical thinking
J893 47	Computing Foundations	♦ Sense-making ♦ Critical Thinking
J68V 47	Software Development	♦ Sense-making
J6BD 47	Professional Practice in Computing	♦ Sense-making ♦ Critical thinking
J68L 47	Computer Science	♦ Critical thinking
J7N3 47	Work-based Learning	♦ Curiosity ♦ Creativity ♦ Sense-making ♦ Critical thinking
J8FK 47	Database Design Fundamentals	♦ Sense-making ♦ Critical Thinking
J89A 47	Client Operating Systems	♦ Creativity ♦ Sense-making

Assessment strategy for the qualification

Unit code	Unit title	Assessment method
J893 47	Computing Foundations	♦ Product: digital artefacts; screenshots; charts; graphs; reports; code
J6BD 47	Professional Practice in Computing	♦ Product: project report
J7S2 47	Computer Programming: Applied Mathematics	♦ Knowledge: a test of knowledge and understanding (closed-book)
J68L 47	Computer Science	♦ Product: digital artefacts ♦ Knowledge: a test of knowledge and understanding (closed-book)
J68R 47	Data Science	♦ Product: digital artefacts ♦ Knowledge: a test of knowledge and understanding (closed-book)
J68V 47	Software Development	♦ Product: digital artefacts
J6BB 47	Web Development	♦ Product: digital artefacts
J68N 47	Cyber Security	♦ Product: digital artefacts ♦ Knowledge: a test of knowledge and understanding (closed-book)
J68S 47	Network Infrastructure	♦ Product: digital artefacts ♦ Knowledge: a test of knowledge and understanding (closed-book)
J68W 47	Big Data	♦ Product: digital artefacts ♦ Knowledge: a test of knowledge and understanding (closed-book)
J68X 47	Blockchain	♦ Product: digital artefacts ♦ Knowledge: a test of knowledge and understanding (closed-book)
J68Y 47	Cloud Computing	♦ Product: digital artefacts ♦ Knowledge: a test of knowledge and understanding (closed-book)
J690 47	Data Flow	♦ Product: digital artefacts

Unit code	Unit title	Assessment method
J692 47	Internet of Things	♦ Product: digital artefacts ♦ Knowledge: a test of knowledge and understanding (closed-book)
J89A 47	Client Operating Systems	♦ Product: digital artefacts; checklists; reports
J8FK 47	Database Design Fundamentals	♦ Product: Digital artefacts: Tables; Database; SQL code ♦ Knowledge: A test of knowledge and understanding (closed-book)
J693 47	Artificial Intelligence	♦ Product: digital artefacts ♦ Knowledge: a test of knowledge and understanding (closed-book)
J691 47	Emerging Technologies and Experiences	♦ Product: digital artefacts ♦ Knowledge: a test of knowledge and understanding (closed-book)
J7N3 47	Work-based Learning	♦ Product (personal development plan, self-reflection report) ♦ Performance (observation of professional behaviours, including digital skills and sustainable working practices ♦ Knowledge (learning log or portfolio of work, including case studies and research outcomes)

Approaches to delivery and assessment

HNC Computing aims to develop knowledge and understanding of computing concepts and principles and to provide opportunities for reflective practice. A significant proportion of the learning experience is in practical computing contexts, dealing with both hardware and software components of computing systems.

HNC Computing is best delivered through active learning, with theoretical concepts presented in a framework of lectures, practical demonstrations and workshops, applying theory to practice using activity-based assignments.

You can deliver HNC Computing through blended learning, combining on-campus sessions with online work as appropriate. The learning and teaching methods you will typically use include lectures, seminars, workshops, tutorials, e-learning, online sessions and support. We expect learners to carry out a significant amount of personal study, including background reading, assignment work, preparation for seminars, and revision.

You should aim to develop computational thinking in most computing activities. The main areas of computational thinking that you can develop in the qualification are:

1 logical reasoning
2 decomposition
3 designing algorithms
4 identifying patterns and generalisation
5 abstraction
6 evaluation
7 organising data

You can support learners by using key concepts, terms, and vocabulary and providing opportunities for them to build a shared and consistent understanding. You can develop their collaboration competencies through group project work, peer instruction and structured group tasks, to stimulate dialogue and development of shared understanding.

You can make use of physical computing and making activities to provide tactile and sensory experiences that can enhance learning. In such activities, you model computing processes and practices, using techniques such as worked examples and live coding. You should also aim to model the behaviours suited to the development of a professional ethos in the practice of computing. You can enhance this aspect using guest speakers from the industry and arranging off-campus visits. This also provides an opportunity to introduce ideas about sustainability and how computing technologies and solutions contribute to the UN SDGs.

You should emphasise the importance of design as an aspect of computing. For example, you might ask learners to develop an artefact for a particular user or function and evaluate it against a set of criteria. You can bring abstract concepts in computing to life with real-world, contextual examples, achieved using unplugged activities, analogies and finding examples of the concepts in learners' lived experiences.

The qualification develops knowledge and understanding of computing concepts. You can achieve this through a blend of printed and online materials to supplement face-to-face teaching. The online learning resources may include websites, audio and video media clips, and interactive activities such as online quizzes. You can foster learning opportunities through group work and carrying out practical work. You should also encourage learners to find and evaluate external or third-party material online to enhance their learning. You help learners select and use specialist software to produce evidence for assessment.

To accommodate different aptitudes in your learners, you should adopt a range of teaching and learning approaches, including:

- self-assessment questions and exercises
- programming tasks
- computer-based investigations
- open-ended project work
- feedback and guidance from lecturers
- tutorials
- study guides
- online moderated forums

Given that most units in the HNC require the creation of one or more products (digital and non-digital), you should make sure you have allocated sufficient time for learners to perform the work, evaluate it and adjust it before submission. Where particular resources are required (such as specialist software), you must ensure equity of access to such resources so that no learner is disadvantaged, and your assessment practice is not open to challenge.

You should carefully select assessment approaches that are valid and reliable. We have provided further guidance on holistic assessment in a later section. Where possible, you should seek opportunities to reduce the overall assessment burden on learners. It's important to address accessibility when you provide assessment directions or resources online.

Sequencing or integrating units

The delivery pattern for HNC Computing varies from centre to centre, depending on how you structure the academic year. Rather than specifying a week-by-week delivery schedule (as some do), this guide suggests only the sequence in which you might deliver units, and the optional units that you might select (8 SQA credits in total) for various potential progression routes into an HND Computing award specialism.

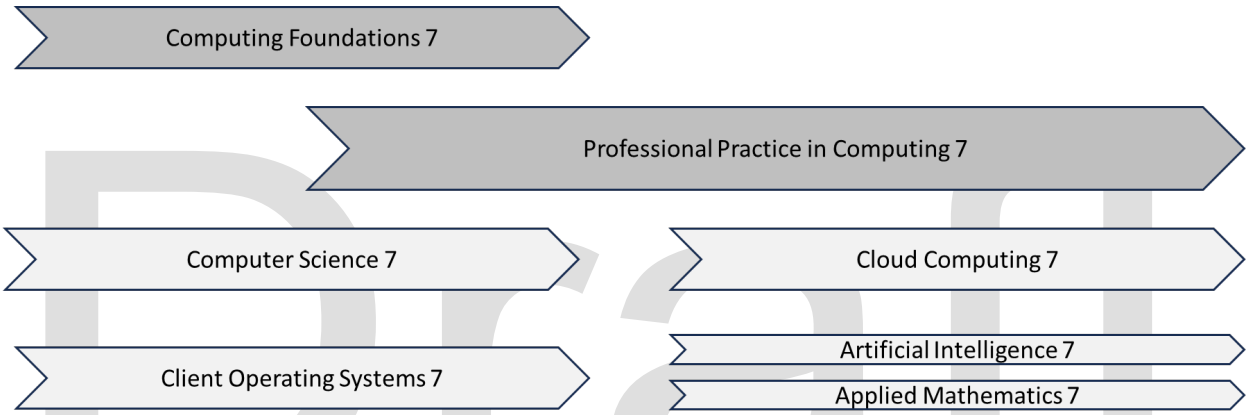
We expect that your delivery will have its initial focus on the sector-specific unit Computing Foundations, exposing learners to the main concepts they expand on in the HNC, particularly in the project-based unit Professional Practice in Computing. We advise that you schedule the start of the work for the Professional Practice unit project to ensure you have introduced sufficient of the core computing concepts, techniques and tools.

HNC Computing builds a strong foundation for learners to progress to one of the computing specialisms at HND level. At the time of writing, these include:

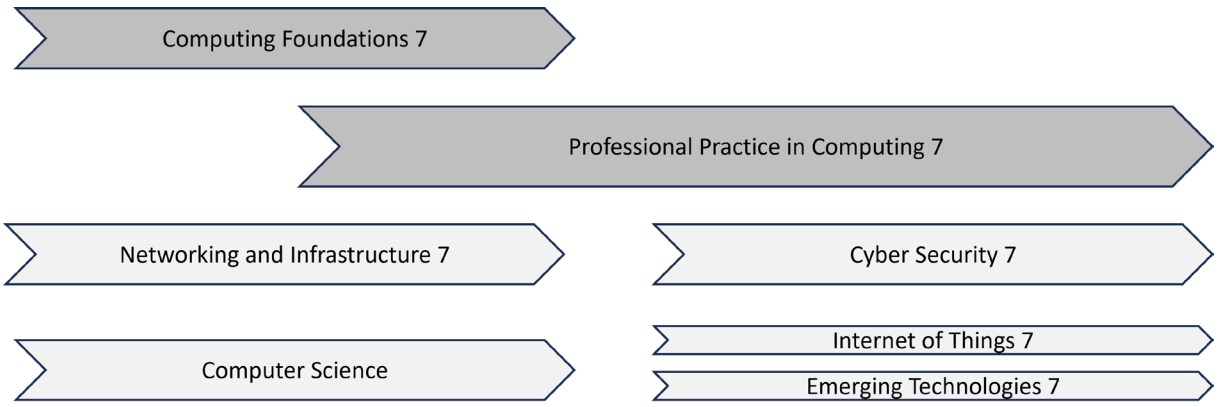
- HND Computer Science
- HND Data Science
- HND Software Development
- HND Cyber Security
- HND Networking and Cloud Infrastructure

The following schema represents the suggested sequences for progression to each of these specialisms.

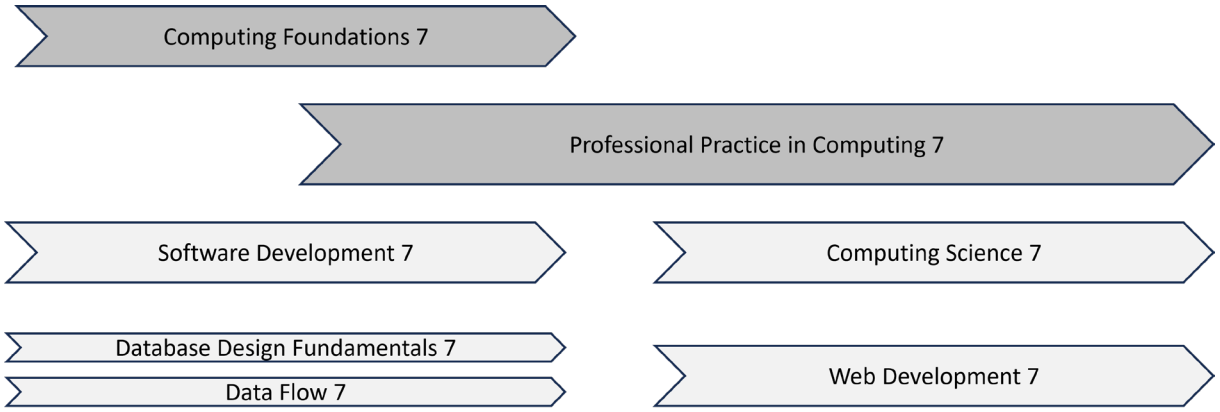
Progression to HND Computer Science



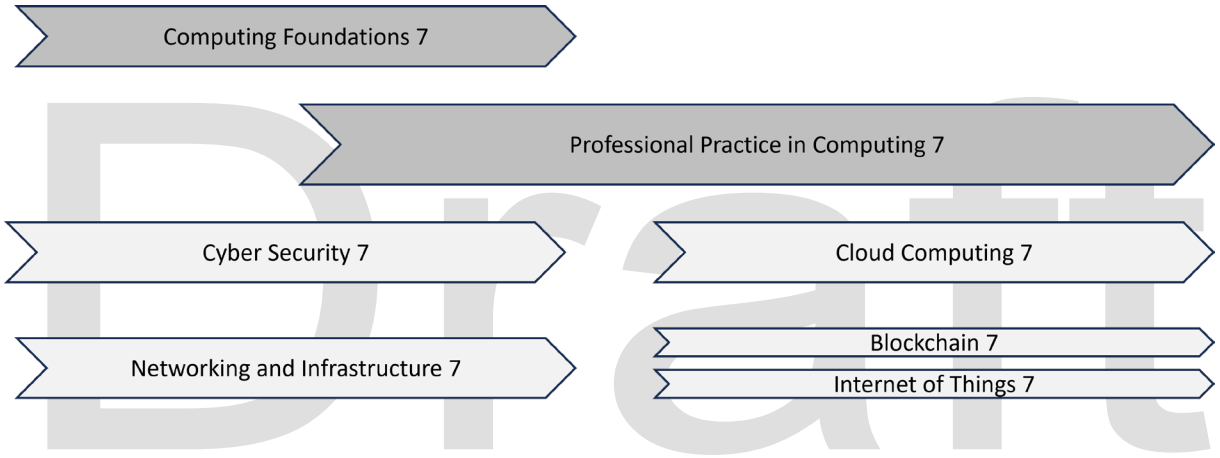
Progression to HND Networking and Infrastructure



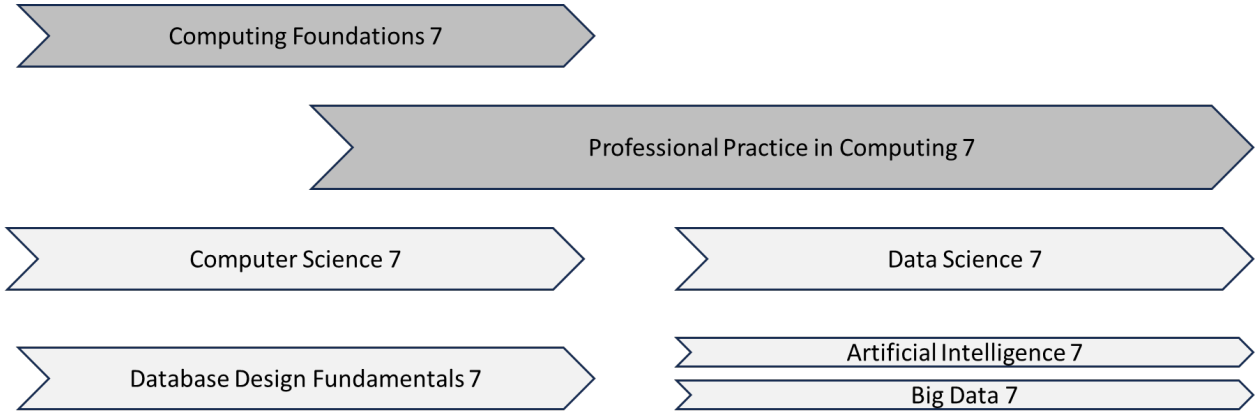
Progression to HND Software Development



Progression to HND Cyber Security



Progression to HND Data Science



Additional guidance on integrated or holistic assessment

Holistic or integrated assessment focuses on assessing a number of outcomes in a unit together, or in some cases the whole unit, rather than specific outcomes. When assessing a unit of competence holistically, the assessment activities integrate a number of aspects of the competence. Holistic or integrated assessment can reduce the time spent on assessment and can promote greater equity in the assessment process.

When developing or revising a Higher National Qualification, SQA works with a development team to devise an appropriate assessment strategy that accommodates holistic or integrated assessment. However, the practice of integrating units for the purposes of learning and teaching is a centre-led activity.

Units are designed to facilitate holistic or integrated assessment approaches that prevent large, unwieldy instruments of assessment.

Sometimes more than one piece of evidence is needed for a unit. For example, if a unit is about building a wall, a learner would need to produce evidence of performance (following the correct procedures and processes when building the wall) and product (a completed wall).

Evidence requirements must do what they say: specify requirements for evidence of learner competence in the unit(s). The evidence must be of sufficient quality for an assessor or verifier to judge that the learner has achieved the unit(s).

Assessing project units

Professional Practice in Computing at SCQF level 7 comprises a software project that is sufficiently large or complex to require analysis and solution by a project team. You organise your cohort into teams of three to five learners, taking into account the preferences expressed by learners in relation to the available projects. Use your judgement about appropriate composition for each team, which should vary in terms of age, gender, ability and other relevant characteristics.

You should have a range of software development projects that are suitable for learners to demonstrate the outcomes of the unit. You should select these to be as authentic (real-world) as possible and aligned to the level of study required. The project should allow learners to draw on the range of outcomes in their Higher National qualification and make it possible for them to develop their meta-skills while engaging in the project. To standardise the learner experience and level of demand, you should use a template to describe the objectives and required outcomes for each project offered to the groups of learners.

Your role in the conduct of the projects is to:

- approve projects
- assign learners to teams
- ensure each team allocates roles at the commencement of the project
- receive briefings from each team on progress against milestones
- observe and record the contributions of individual learners to teamwork and solution
- arrange for the presentation of the project outcomes and solution
- intervene to guide and support learners when circumstances require it

You should approach your role with a **light touch**, leaving each team to make their own decisions about a project methodology, as well as roles, timelines, resource allocations and meetings. We recommend that each learner leads a specific part of the project (for example as lead analyst or lead software designer).

The product evidence is a digital solution to a problem that requires project management and development approaches. Each project team must collectively produce items 1 to 5 below. Each learner must individually produce item 6. Learners must provide the following product evidence:

1 a project plan based on requirements-gathering and analysis
2 the digital solution to the problem
3 a project report (including project evaluation)
4 documentation of the product (technical and user)
5 a presentation of the project outcomes and demonstration of solution
6 a personal statement

The digital product must be a working solution that meets the requirements set out in the project plan. Each learner's personal statement must:

- describe their specific role or roles in the project team
- include self-evaluation of their contribution to the development of the digital product

The performance evidence is in two parts:

- a record of the learner's professional behaviours and contributions to the project; this may be in the form of a checklist
- a recording of the project team's performance in delivering the presentation

Each learner must make an identifiable contribution to the final presentation of the project outcomes and the demonstration of the solution; the contribution can be in any form that is appropriate and agreed with you.

Opportunities for e-assessment

Assessment that is supported by information and communication technology (ICT), such as e-testing or the use of e-portfolios or social software, may be appropriate for some assessments in this unit.

If you want to use e-assessment, you must ensure that you apply the national standard to all evidence and that conditions of assessment (as specified in the evidence requirements) are met, regardless of the mode of gathering evidence.

We expect that learners of HNC Computing use computing tools to create, store and submit assessment evidence for marking. The collection of evidence for grading should be in the form of an e-portfolio. Learners can use the SQA Stellar tool or similar software for this purpose.

In the few units where there is a test of knowledge and understanding, you can use an online test engine (such as SQA SOLAR) to deliver and mark assessments online.

Remediation and re-assessment in Next Generation Higher National Qualifications

Remediation

Remediation allows an assessor to clarify learners' responses, either by requiring a written amendment or by oral questioning, where there is a minor shortfall or omission in evidence requirements. In either case, the assessor must formally note such instances, in writing or as a recording, and make them available to the internal and external verifier.

Remediation is not permitted for closed-book assessments.

The size and structure of the larger NextGen: HN units should mean that the assessor or lecturer is close enough to ongoing assessment activity in project-based units to identify the requirement for remediation as it occurs.

Re-assessment

We must give learners who fail the unit a re-assessment opportunity or, in exceptional circumstances, two re-assessment opportunities. Where we have introduced larger units to the framework, we expect instances of re-assessment to be minimal, due to the approach to assessment and remediation. Where re-assessment is required in a project-based unit, a substantially different project must be used.

Resource requirements

The delivery of HNC Computing requires access to computing and IT resources, such as PCs and networks for communicating to the internet and providing learning materials and storage. Some units, such as Software Development, require other specialist software. You should carefully consider the resource implications of each unit that is selected to be part of the course, to ensure that it is accessible on your computing and IT systems, and that learners can also have access when they are outwith your centre. The resource requirements for each unit are set out in the unit specification.

Information for centres

Equality and inclusion

The units in this qualification are designed to be as fair and as accessible as possible, with no unnecessary barriers to learning or assessment.

You should take into account the needs of individual learners when planning learning experiences, selecting assessment methods, or considering alternative evidence.

Guidance on assessment arrangements for disabled learners and/or those with additional support needs is available on the assessment arrangements web page.

Internal and external verification

All instruments of assessment used in this qualification should be internally verified according to your centre's policies and SQA's guidelines.

SQA carries out external verification to ensure that internal assessment meets the national guidelines for this qualification.

Further information on internal and external verification is available in SQA's Guide to Assessment.

Glossary

SQA credit value: the credit value allocated to a unit gives an indication of the contribution the unit makes to an SQA qualification. An SQA credit value of 1 represents approximately 40 hours of programmed learning, teaching, and assessment.

SCQF: the Scottish Credit and Qualifications Framework (SCQF) provides the national common framework for describing programmes of learning and qualifications in Scotland. SCQF terminology is used throughout this guide to refer to credits and levels. For further information on the SCQF, visit the SCQF website.

SCQF credit points: SCQF credit points provide a way of describing and comparing the amount of learning required to complete a qualification at a given level of the framework. 1 National Unit credit is equivalent to 6 SCQF credit points. 1 National Unit credit at Advanced Higher and 1 SQA Advanced unit credit (irrespective of level) is equivalent to 8 SCQF credit points.

SCQF levels: the level a qualification is assigned in the framework is an indication of how hard it is to achieve. The SCQF covers 12 levels of learning. SQA Advanced Certificates and SQA Advanced Diplomas are available at SCQF levels 7 and 8, respectively. SQA Advanced units are usually at levels 6 to 9 and graded units at level 7 and 8. National Qualification Group Awards are available at SCQF levels 2 to 6 and are usually made up of National Units, which are available from SCQF levels 2 to 7.

Information for learners

HNC Computing

This information explains:

- what the qualification is about
- what you should know or be able to do before you start
- what you will need to do during the qualification
- opportunities for further learning and employment

HNC Computing aims to provide core knowledge, understanding and skills to support you to further your studies in computing. It enables you to go on to achieve a career in areas such as software development, cyber security, and networking and infrastructure. It gives you the foundational knowledge and cognitive skills you need to study computing science and other computing and IT specialisms at a more advanced level.

In this HNC, you gain an understanding of the various issues and contexts that affect a computing professional in today's business environment. You develop your computing knowledge alongside a wider range of workplace skills that employers are looking for, such as effective communication and problem solving. You have practical experience in using computing technologies and you gain skills in the main tasks that are carried out as software is built and maintained, such as analysis, design, programming, and evaluation.

Before you start, you should already have a basic understanding of the role of computer systems in today's world and the range of their applications to solve business and engineering problems. You must have a good level of numeracy, along with communication skills. You can evidence these with qualifications that you have previously gained. Entry to the qualification is at your centre's discretion.

This qualification is taught by knowledgeable and experienced lecturers and you are supported in your learning with printed and online material. Online learning resources may include websites, audio and video media clips, and interactive activities, such as online quizzes. You carry out practical work in computing that requires you to have access to computing resources when at home. You engage with other learners in group work and project work, and develop meta-skills in self-management, teamwork, communication, creativity and innovation. You gain meta-skills as you work to develop your knowledge and understanding of the technologies and practices of computing. If you have any disabilities, your centre will put in place any adjustments or additional support that you may require.

You have the opportunity in this qualification to gain digital skills that are of value to employers, as well as sufficient knowledge and understanding of computing techniques and tools to enable you to enter employment in a junior role. You gain understanding of computing concepts and develop learning and studying skills that provide you with a foundation for further study in computing specialisms, such as networking and infrastructure, cyber security, software development and computer science.

Qualification information

HNC Computing comprises 240 hours of learning (15 SQA credits), of which 120 hours are self-directed learning. It consists of two mandatory units totalling 7 SQA credits, with the remaining 8 SQA credits being selected from a set of optional units as set out in the HNC Computing framework. The optional units available for study is at your centre's discretion and may reflect available progression and articulation routes to further qualifications.

The Computing Foundations unit (3 SQA credits) is where you learn the concepts that underpin the practice of computing in a range of contexts, including software development and programming, elements of data science and cyber security. During the unit, you learn to use a wide range of digital devices, such as personal computers and tablets. You use application packages, such as word processing, spreadsheet and presentation software. The unit also covers cyber security and data analysis. For example, you might be shown how to use a spreadsheet to analyse a small dataset, and then present your findings in graphs and charts. You learn the fundamentals of programming in a modern high-level language, such as Python.

The meta-skills you develop cover self-management, social intelligence and innovation. For example, you improve your self-management skills by making decisions based on data and you also cover ethics. You develop your numerical, communication and digital skills throughout the unit, particularly your digital literacy.

Assessment may take several different forms. For example, you might be asked to maintain a portfolio of your work, where you would keep your documents, spreadsheets, presentations and programs. Alternatively, you might be asked to carry out practical assignments.

In the Professional Practice in Computing unit, you carry out a group project in which you investigate and solve a computing problem, communicate your findings and demonstrate your ability to manage a project, work as part of a team and produce a report.

In the project investigation, you use some subject-specific knowledge as well as a mixture of programming skills, project management skills and report writing and presentation.

You use problem-solving skills, teamwork and collaboration to complete the project from a given real-world scenario. You document the project in a project diary and timeline and expand your project management knowledge and skills.

Other learning experiences and the further development of meta-skills will vary according to the optional units you select to complete the required number of credits for the HNC award. You also gain an appreciation of the ways in which computing technologies and solutions have an impact on sustainability, with reference to the UN Sustainable Development Goals (SDGs).

Administrative information

Published: August 2024 (version 0.1)

History of changes

Version	Description of change	Date

Note: please check SQA's website to ensure you are using the most up-to-date version of this guide, and check SQA's APS Navigator to ensure you are using the most up-to-date qualification structure.

If a unit is revised:

- no new centres can be approved to offer the previous version of the unit
- centres should only enter learners for the previous version of the unit if they can complete it before its finish date

For further information on SQA's Next Generation Higher National Qualifications please contact nextgen@sqa.org.uk.