



**Arrangements for:
HNC Information Technology**

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Acknowledgement

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Necessary

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History of changes

It is anticipated that changes will take place during the life of the qualification, and this section will record these changes. This document is the latest version and incorporates the changes summarised below.

Version number	Description	Date	Authorised by
02	Updated optional Units added.	July 2009	Caroline Douglas
03	Addition of revised IT in Business Units and added options.	29 July 2010	Caroline Douglas
04	Updated optional Units added.	July 2011	Caroline Douglas

1 Introduction

This is the Arrangement Document for the new Group Award in HNC Information Technology, which was validated in June 2005. This document includes: background information on the development of the Group Award, its aims, guidance on access, details of the Group Award structure, and guidance on delivery.

The award title, HNC Information Technology, reflects the contents of the Units in the mandatory section of the award. Information Technology is taken in its widest sense, the convergence of Computing and Communication Technologies.

This title was agreed at a well-attended seminar for practitioners in June 2004. HNC Information Technology offers a wide range of Information Technology skills that can be applied in different areas in the workplace.

2 Rationale for the development of the award

2.1 The Development Groups

In order to bring this award to fruition, a group held their first meeting on 11 October 2004. The group examined National Occupational Standards (a mapping between National Occupational Standards is contained in Appendix 1) for both Information Technology Users and Information Technology Practitioners as a guide to subject coverage of the new awards.

2.2 The Need for the Award

There is no national award at present for HNC Information Technology. As can be seen from the data collected in Table 1 below, there were 499 entries for similar awards. SQA have compiled some statistics for these awards.

Product Code		Product Title	Session					Total
			2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	
G13R	15	Business Info Systems	0	0	0	12	0	12
G143	15	IT for Business	0	0	14	0	30	44
G17E	15	IT Applications	12	19	13	7	7	58
G17L	15	IT and Business Administration	17	13	17	1	11	59
G5E0	15	IT with Management Skills	0	0	0	1	10	11
G5N6	15	Information Technology	0	0	0	4	45	49
G6X7	15	Business IT	0	0	4	0	1	5
G7CY	15	Administration and IT	0	0	0	0	261	261
Total			29	32	48	25	365	499

Table 2: Projected Uptake	
Previous year	25
Current year	365
First year of new award	100
Second year of new award	150
Third year of new award	250

It is envisaged that as current locally devised awards are phased out, centres will begin to use these new national awards. The awards in Table 1 will be disappearing due to the lifespan.

2.3 Market Research

Recent market research (IT Insights: Skills Gaps Analysis — Scotland, e-Skills UK and Gartner Consulting February 2005) indicates that there is an Information Technology skills gap in the UK workforce. Many employers have identified a lack of both Information Technology professional skills and Information Technology user skills within their organisations. In addition they expect an increasing percentage of their workforce to have "advanced level" Information Technology skills.

The research shows that there is increasing demand for specific skills in SQL, Oracle and MS Office and for database administrator jobs. For example a recent survey (Salary Services Ltd, Q4 of 2004; www.salaryservices.co.uk) of the top Information Technology skills advertised in the UK shows SQL top with an increase of 20% over the previous quarter, 'Office' second with an increase of 17%, and Oracle skills sixth, with an increase of 19%.

The sector targeted by this award has been identified in the report IT Insights: Skills Gap Analysis — Scotland for e-skills (February 2005). This shows that Business Managers and IT Users are and will be required. Scottish firms are enthusiastic about using IT to support business especially in the Finance and Accounting areas. Scotland has an effective broadband infrastructure programme and e-procurement and e-trading are increasing.

One in 37 of all employees in Scotland are defined as an IT professional.

The key messages in the report indicate:

- ◆ 37,115 employees in the IT industry
- ◆ 42,289 IT professionals working in other industries
- ◆ 1.6 million IT users in the workforce (Page 27, IT Insights: Skills Gap Analysis — Scotland for e-skills, February 2005)

It is further indicated that there is a requirement to upskill the current business manager workforce. To address a three-year forecast (2005–2008) it is estimated that 48,000 managers need their skills updating, 51% to level 2 and 43% to level 3 and above. This 43% is a target for the HNC award. For the IT user it is estimated that 531,000 need their skills updated. 61% to level 2 and 39% to level 3+. Again this 39% is a target for the award.

The e-skills document IT Insights: Employer Skills Needs, <http://www.e-skills.com/Research/itinsights/1055#employer> gives an outline of the IT User Skills framework. IT user skills are grouped into four areas — one of which is ‘Using and Maintaining ICT’. This covers troubleshooting, maintenance and security.

In Chapter 4 of the document there is an analysis of skills gaps amongst IT users in the workforce. This shows that 48% of establishments have skills gaps in Using and Maintaining ICT. This is the second highest area of demand, coming after ‘Manipulating and Presenting Information’. In Chapter 4, Page 34 the document states, ‘the demand for additional IT user skills training is most apparent for troubleshooting, spreadsheets and databases at Intermediate/Advanced level and for word processing at Advanced/Expert level’.

The implications are:

- ◆ The inclusion of a Unit in basic troubleshooting, maintenance and security within an IT qualification in advanced user skills is justified. Research from employers shows that Advanced IT users need skills in IT troubleshooting, maintenance and security.
- ◆ ‘The IT industry will have on-going demand for technical skills’ (Page 8, IT Insights: Skills Gap Analysis — Scotland for e-skills (February 2005)).

The HNC Information Technology award will help meet the demands outlined in the above research.

Research carried out with employers show that there is a skills gap in IT, which this award seeks to address.

Salary Services Limited (www.salaryservices.co.uk/ November 2005) rate the top ten IT skills as follows:

Rank	Skill	No of Jobs Qtr3/2005	%Change From Previous Year
1	SQL	22999	+33
2	C	15648	+8
3	OFFICE	15009	+24
4	UNIX	13476	+13
5	JAVA	13302	+4
6	ORACLE	12950	+23
7	C++	12506	+5
8	SQL SERVER*	10223	+43
9	.NET*	9463	+58
10	C#*	8754	+93

Table 3 shows the top IT skills advertised, in Quarter three 2005, with the % change from the same quarter in 2004. In all cases there is an increase demand for IT skills. The figures are for all of the United Kingdom.

The number of IT permanent posts advertised in Scotland and Northern Ireland has increased by 53% compared to a year ago.

The HNC Information Technology awards will help meet the demands outlined in the above research.

Membership of a Professional Body

Confirmation has been given by the British Computer Society that graduates holding an HNC Information Technology award will be eligible to apply for BCS Associate Membership.

2.4 Candidates for Whom this Award is Intended

- ◆ School leavers in possession of an Information Systems or Computing Higher.
- ◆ Short and long term unemployed wishing to retrain to gain employment in an Information Technology field.
- ◆ Full and part-time candidates wishing to gain employment in the area of Information Technology and Information Systems.
- ◆ People in employment, both IT Professionals and others, who wish to update their knowledge of IT applications and database systems.
- ◆ People who wish to progress to further study in Information Technology or an IT related discipline.
- ◆ Progression from NQ Group Award or holders of National Progression Awards (under development).

2.5 Relationship of this Award to Existing SQA Provision

Since this award is being written under the new design guidelines for Higher National Awards, it is intended that it will replace all locally devised HNC Information Technology awards.

2.6 Articulation Arrangements

In designing the award, the Qualification Design Team has been fully aware of the need for the qualification to contain relevant technical and transferable skills to enable immediate entry to employment while at the same time allowing articulation to degree courses. The Qualification Design Team believe that an appropriate balance between academic and vocational knowledge and skills has been achieved through the mix of Unit content and teaching approaches. Care has been taken in the design of the curriculum of these awards to ensure that topics and Units required to maintain articulation routes are included.

Articulation agreements are already in place for the existing locally devised HNC Information Technology awards and it is expected that similar agreements will be established for the new award.

The new Higher National Certificate in Information Technology is nationally devised and will be delivered across Scotland. Like Standard Grades and Highers it will be a nationally delivered, assessed and recognised qualification. Like all new Higher

National programmes the Qualification Design Team engaged representatives from Higher Education.

Some examples of articulated entry to a degree programme are shown in Table 4 below.

Table 4: Articulated Entry to HE Institutions	
HE INSTITUTION	DEGREE
Abertay University	BSc (Hons) Information Systems (Stage 2) BSc (Hons) Web Design and Development (Stage 2) BSc (Hons) Computing (Stage 2)
Bell College	DipHE in Business Information Management (Stage 2) BA Business Information Management (Stage 2)
Robert Gordon University	BSc(Hons) Information Technology (Stage 2)
University of Aberdeen	BSc Internet Information System (Stage 2)

It is possible for a candidate to articulate directly to the second year of some university degree programmes. Typically articulation will be limited by the following:

- ◆ Candidates would normally need to have gained 15 HN credits (120 SCQF credits at level 7 or above).
- ◆ The candidate should undertake specific optional Units that are preferred by the target university or may articulate into first year.

Examples: Abertay University specify for BSc(Hons) Web Design and Development:

DH32 35 Software Development: Developing for the World Wide Web or
DH2R 34 Multimedia: Developing Multimedia Applications + one e-commerce option.

BSc(Hons) Computing:

DH34 35 Software Development: Event Driven Programming (in Java) +
DH32 35 Software Development: Developing for the World Wide Web (HTML) +
one operating systems option.

- ◆ Articulation, whether formally established or not, is likely in all cases to require candidates to choose their optional Units wisely. Candidates should be advised to seek information at an early stage about which optional Units will make them eligible for consideration by individual HE institutions.
- ◆ The university may limit the degree programmes into which an HNC graduate may be given articulated access.
- ◆ In order to help a candidate to progress to HE, centres need to become familiar with the requirements of various institutions and to offer advice that will help candidates to articulate successfully.
- ◆ To some extent the requirements of HE institutions may affect the choice of HN Units that are offered by centres. However, this is not the only factor that will affect these decisions.

3 Aims of the award

3.1 General aims of the award

The award in Information Technology has a range of broad aims, which are generally applicable to all equivalent Higher National awards. Some of these general aims are:

- ◆ to develop the candidate's knowledge and skills, such as planning, analysing and synthesising
- ◆ to develop employment skills and enhance candidates' employment prospects
- ◆ to develop progression within the Scottish Credit and Qualifications Framework
- ◆ to develop study and research skills
- ◆ to develop transferable skills including Core Skills
- ◆ to provide academic stimulus and challenge, and foster an enjoyment of the subject

3.2 Specific aims of the award

- ◆ to offer an up to date Information Technology (IT) award that reflects recent development in IT and enables candidates to gain skills that are in demand in the workplace
- ◆ to offer progression routes to further study in Information Technology and related disciplines
- ◆ to offer a flexible qualification containing Units across a range of IT related areas
- ◆ to embed employability skills, including working in teams, problem solving, communication skills, personal and citizenship skills
- ◆ to provide a qualification with a vocational and academic balance, that develops both practical IT skills and theoretical knowledge
- ◆ to enable candidates to improve their Core Skills profile

4 Access to awards

4.1 Access Requirements for the Award

It is intended that admission to this course should be as broadly based as possible, but that this should be consistent with the selection of candidates who have a reasonable opportunity of successfully completing the course.

However, in addition to the following, each Higher National Unit specification includes recommended access levels. Candidates should normally satisfy both sets of access requirements.

As with all SQA qualifications, access is at the discretion of the centre and the recommendations are for guidance only.

Some examples of appropriate formal entry qualifications to the HNC are specified. They are not prescriptive, exhaustive or mutually exclusive and may be offered in a variety of combinations:

- ◆ Higher or Intermediate 2 Computing or Information Systems
- ◆ Any other relevant Scottish Group Award at Intermediate 2 or Higher
- ◆ Any two relevant National Courses at Higher together with three standard grade passes at level 3 or above

- ◆ An SVQ at level 2 or 3 in Information Technology or other relevant area
- ◆ Relevant National Units at appropriate level (example: Core Skills Units at Intermediate 1 or 2) combined with any of the above
- ◆ Different combinations of relevant National Qualifications, Vocational Qualifications and equivalent qualifications from other awarding bodies may also be acceptable, as would suitable vendor qualifications at an appropriate level, for instance, PC passport or ECDL with Core Skills Units at Intermediate 1 or 2.

4.2 Alternative Access Arrangements

The presenting centre may operate alternative access arrangements in cases where the candidate is convinced s/he already has the required competences in a given area. These arrangements are as follows:

- ◆ Assessment on demand
- ◆ Credit Transfer
- ◆ Accreditation of Prior Learning
- ◆ Relevant Work Experience (Mature candidates with suitable work experience may be accepted for entry provided the enrolling centre believes that the candidate is likely to benefit from undertaking and achieving the award.)

It is advisable for all candidates to possess prior knowledge or experience in the computing or information technology field although no formal qualifications are necessary if suitable experience had been gained informally or via work experience. Such work experience may provide evidence of a candidate's skills and knowledge as they apply to particular HN Units or to the required Core Skills entry profile.

5 Award structure

5.1 Framework

A total of 12 credits must be achieved, comprising 96 SCQF credit points, to gain an HNC and this must incorporate 48 SCQF credit points at SCQF level 7. An HNC will normally include one Graded Unit of 8 SCQF credit points at SCQF level 7.

A total of **12** credits is required to gain the HNC Information Technology Award:

8 credits must be gained by undertaking all Units in the HNC Mandatory Units table (Table 5).

4 credits can be chosen from the HNC Optional Units table (*Table 6*) or by selecting local options to make up the required 12 credits of the HNC. Local options must be validated into the award by SQA.

If a Unit carries any Core Skill(s) then these are listed in brackets under the Unit title.

Mandatory Units (8 HN credits)

Table 5: Mandatory Units			
Unit title	Code	Credit value	SCQF level
IT in Business: Databases (IT at Higher) OR IT in Business: Databases (IT at Higher)	DE1N 34 F84X 34	1 1	7 7
IT in Business: Spreadsheets (IT at Higher) OR IT in Business: Spreadsheets (IT at Higher)	DEIM 34 F84V 34	1 1	7 7
Working within a Project Team	DH21 34	1	7
Software Development: Applications Development	D76N 34	2	7
Database Design Fundamentals	DV6E 34	1	7
PC: First Line Support	DV6L 34	1	7
Information Technology: Group Award Graded Unit 1	DV6D 34	1	7

Optional Units (4 HN credits)

Table 6: Optional Units				
Unit title	Code	Credit value	SCQF level	Subject/ broadening
IT in Business: Word Processing, Spreadsheets and Databases: Introduction	DE24 33	1	6	IT
Developing Skills for Personal Effectiveness	DF4D 33	1	6	Broadening/ Core Skill
Personal Development Planning	DE3R 34	1	7	Broadening
Work Role Effectiveness (2003)	DG6E 34	3	7	Broadening
Workplace Communication in English	DE1K 33	1	6	Broadening/ Core Skill
Information Technology: Information Systems and Services	DH37 34	1	7	IT
SQL: Introduction	DH3J 34	1	7	IT
e-commerce: Introduction	DV6F 34	1	7	IT
e-marketing	DV6H 34	1	7	IT
e-commerce: Publishing Websites	DV6G 34	2	7	IT
Computing: Planning	DH35 34	1	7	IT
Software Development: Event Driven Programming	DH 34 35	2	8	IT

Table 6: Optional Units				
Unit title	Code	Credit value	SCQF level	Subject/ broadening
Systems Development: Introduction	DH3F 34	1	7	IT
Software Development: Developing for the World Wide Web	DH32 35	2	8	IT
Multimedia: Developing Multimedia Applications	DH2R 34	2	7	IT/Core Skill
Computer Operating Systems 1	DH33 34	1	7	IT

Unit title	Code	Credit value	SCQF level	Subject/ broadening
Multi User Operating Systems	DH3A 34	1	7	IT
Human Resource Management: An Introduction	DN78 34	1	7	Broadening
Marketing: An Introduction	F7BX 34	1	7	Broadening
Recording Financial Transactions	DP9F 33	1	6	Broadening
Using Financial Accounting Software	DE59 34	1	7	Broadening
Functional Areas of Business	DV6J 34	1	7	Broadening
Statistics for Business	DE3M 35	1	8	Broadening
Supporting Users and Troubleshooting Desktop Applications	DM34 34	1	7	IT
Supporting Users and Troubleshooting Desktop Operating System	DM35 34	1	7	IT
Software Development: Relational Database Systems (Finish Date 31/07/2013) OR	DH3D 35	2	8	IT
Software Development: Relational Database Systems	FE77 35	2	8	IT
Web Design: An Introduction	DV5M 34	1	7	IT
Communication: Using Information Technology and Desktop Publishing	D7LW 34	1	7	IT/Core Skill
Computer Networks: Building Local Area Networks	DH31 34	2	7	IT
Digital Imaging: Bitmap Techniques	F207 34	1	7	IT
Digital Imaging: Vector Techniques	F208 34	1	7	IT
Digital Imaging: Bitmap and Vector	F1YX 34	11	7	IT
IT in Business: Word Processing and Presentation Applications (Finish Date 31/07/2014) OR	DE1L 34	2	7	IT
IT in Business: Word Processing and Presentation Applications	F84C 34	1	7	IT
Software Development: Programming in PL/SQL	F4TJ 35	1	8	IT
Human Computer Interface	F6BV 35	1	8	IT
IT in Business: Advanced Word Processing	F84A 35	1	8	IT
IT in Business: Advanced Spreadsheets	DEIV 35	1	8	IT
Configuring a Desktop Operating System	FK89 34	2	7	IT
Troubleshooting a Desktop Operating System	FK8A 34	2	7	IT
Managing a Desktop Operating System Deployment	FK88 35	2	8	IT
Local Options: Unit(s) must be levelled and validated into the HNC by SQA (Up to 2 credits)				

5.2 Graded Unit

The purpose of the Graded Unit is to assess the candidate's ability to integrate and apply the knowledge and/or skills gained in individual Units, to demonstrate that they have achieved the specific aims as detailed in Section 3.2 and to grade candidate achievement.

Candidates will undertake a 1 credit Graded Unit at level 7 in the HNC Information Technology award.

5.2.1 Rationale for Graded Unit Assessment

As a mandatory part of the HNC Information Technology, candidates will undertake an examination based Graded Unit, which is a single credit at SCQF level 7. This Graded Unit requires that the candidate undertakes a three hour closed-book written examination, however, this can be assessed on-line in its entirety using an SQA assessment engine.

5.3 Core Skills

This award has been designed using the new design principles and therefore the importance of Core Skills has been recognised and these are developed throughout the award.

5.3.1 Core Skills Entry and Exit Levels

Core Skill	Entry level	Exit level
Communication		
Oral communication	5	6
Written communication	5	6
Numeracy		
Using Graphical Information	4	4
Using Number	4	4
Information Technology	5	6
Problem Solving		
Critical Thinking	4	5
Planning & Organising	4	5
Reviewing & Evaluating	4	5
Working with Others	5	6

Core Skills Embedded

There is automatic certification of Core Skills as detailed below. There are also further opportunities to gather evidence towards Core Skills or Core Skills components (see Appendix 3).

Table 8: Embedded Core Skills				
Core Skill	Component	HN Unit	Level	Mandatory/ Optional
Communication	Oral Communication	Working within a Project Team	H	M
	Written Communication	Working within a Project Team	H	M
	Oral Communication	Workplace Communication in English	Int 2	O
	Written Communication	Workplace Communication in English	Int 2	O
Numeracy	Using Graphical Information	Statistics for Business	H	O
	Using Number	Statistics for Business	H	O
Information Technology	Using Information Technology	IT in Business – Databases +	H	M
		IT in Business – Spreadsheets +	H	M
		Software Development: Applications Development (All three Units)	H	M
Problem Solving	Critical Thinking	PC: First Line Support	Int 2	M
	Planning and Organising	PC: First Line Support	Int 2	M
	Reviewing and Evaluating	PC: First Line Support	Int 2	M
	Critical Thinking	Developing Skills for Personal Effectiveness	Int 2	O
	Planning and Organising	Developing Skills for Personal	Int 2	O
	Reviewing and Evaluating	Developing Skills for Personal Effectiveness	Int 2	O
	Critical Thinking	Multimedia: Developing	H	O

Table 8: Embedded Core Skills				
Core Skill	Component	HN Unit	Level	Mandatory/ Optional
		Multimedia Applications		
	Planning and Organising	Multimedia: Developing Multimedia Applications	H	O
	Reviewing and Evaluating	Multimedia: Developing Multimedia Applications	H	O
Working with Others		Working within a Project Team	H	M

6 Approaches to delivery and assessment

6.1 Content and context

All of the listed Units may be delivered as standalone qualifications. They may also be included in other Higher National Group Awards as mandatory or optional Units. Where they are delivered within the HNC Information Technology framework they constitute a coherent, relevant programme to equip candidates with the knowledge and or/skills for the current and future working environment as evidenced by IT Insights: Skills Gap Analysis — Scotland. The options provide the candidate with the opportunity to choose options in specialist areas as shown in the Table 9.

Table 9: HNC Optional Units in Coherent Streams				
Unit title	Code	Credit value	SCQF level	Subject/ broadening
Underpinning Knowledge				
IT in Business: Word processing, Spreadsheets and Databases: Introduction	DE24 33	1	6	IT
Developing Skills for Personal Effectiveness	DF4D 33	1	6	Broadening/Core Skill
Personal Development Planning	DE3R 34	1	7	Broadening
Work Experience				
Work Role Effectiveness (2003)	DG6E 34	3	7	Broadening
Workplace Communication in English	DE1K 33	1	6	Broadening /Core Skill
Information Systems				
Information Technology: Information Systems and Services	DH37 34	1	7	IT
SQL: Introduction	DH3J 34	1	7	IT
e-commerce				
e-commerce:Introduction	DV6F 34	1	7	IT
e-marketing	DV6H 34	1	7	IT
e-commerce: Publishing Websites	DV6G 34	2	7	IT
Software Development				
Computing: Planning	DH35 34	1	7	IT
Human Computer Interface	DF6D 35	1	8	IT
Software Development: Event Driven Programming	DH 34 35	2	8	IT
Systems Development: Introduction	DH3F 34	1	7	IT

Table 9: HNC Optional Units in Coherent Streams				
Unit title	Code	Credit value	SCQF level	Subject/ broadening
Web/Multimedia				
Software Development: Developing for the World Wide Web	DH32 35	2	8	IT
Multimedia: Developing Multimedia Applications	DH2R 34	2	7	IT/Core Skill
Operating Systems				
Computer Operating Systems 1	DH33 34	1	7	IT
Multi User Operating Systems	DH3A 34	1	7	IT
Business				
Human Resource Management	DN78 34	1	7	Broadening
Marketing: An Introduction	DE3C 34	1	7	Broadening
Recording Financial Transactions	DP9F 33	1	6	Broadening
Using Financial Accounting Software	DE59 34	1	7	Broadening
Functional Areas of Business	DV6J 34	1	7	Broadening
Statistics for Business	DE3M 35	1	8	Broadening

Table 9: HNC Optional Units in Coherent Streams

For example, if the candidate had a specific interest in e-commerce their choice could be the following options:

- ◆ *DV6F 34 e-commerce: Introduction*
- ◆ *DV6H 34 e-marketing*
- ◆ *DV6G 34 e-commerce: Publishing Websites*

Or

If the candidate had a specific interest in e-commerce their choice could be the following options:

- ◆ *DN78 34 Human Resource Management*
- ◆ *DE34 04 Marketing: An Introduction*
- ◆ *DE5D 34 Recording Financial Transactions*
- ◆ *DE59 34 Using Financial Accounting Software*
- ◆ *DV6J 34 Functional Areas of Business*

However, a cohesive grouping of optional Units could be chosen without a candidate selecting from only one set of options. For instance, if a candidate had an interest in the marketing area their choice may be:

- ◆ *DE3C 34 Marketing: An Introduction*
- ◆ *DV6H 34 e-marketing*

6.2 Core Skills Sign posting

Details on how Core Skills can be developed during these awards is given in Appendix 3.

6.3 Delivery and Assessment

The assessment strategy of the design principles is to encourage a more holistic approach to assessment has been adopted in the award. The new HN Unit specification places the emphasis on reducing assessment load for candidates and centres by devising assessments which assess the entire theory content of the Unit, where appropriate, and by sampling of knowledge and/or skills carried out under closed-book conditions on a random basis to ensure the candidates do not have prior knowledge of the sample.

Unit specifications detail exactly the Evidence Requirements and assessment procedures for each assessment event. Should centres wish to use a different mode of assessment from that recommended, they should seek prior moderation from SQA Quality Assurance.

6.4 Open Learning and e-Learning

The awards may delivered by different modes:

- ◆ Open Learning
- ◆ Distance Learning
- ◆ e-Learning

Use of e-assessment

The use of e-assessment is encouraged and could be managed in several ways. For instance several Units have an Outcome that is assessed by objective testing.

For example: *DV6F 34 e-commerce: Introduction*.

The use of e-Portfolios and/or e-Logbooks is also encouraged.

Signposting of opportunities for e-assessment are identified in Appendix 4.

The awards may be delivered by open, distance or e-learning providing adequate preparations and controls are in place. On some occasions a mix of conventional face-to-face and innovative delivery and assessment may be utilised, however, this is subject to a centre's quality assurance procedures.

As well as the traditional face to face model, it is envisaged that wherever possible centres will deliver these awards in an integrative manner and the individual Unit specifications identify where this may be possible. An example of this could be:

- ◆ *DH35 34* *Computing Planning*
- ◆ *DH21 34* *Working within a Project Team*
- ◆ *D76N 34* *Software Development: Applications Development*

The overall assessment strategy under the SQA Design Principles is to encourage a more holistic approach to assessment.

6.5 Credit Transfer Transitional Arrangements

Credit Transfer is used in lieu of the normal Evidence Requirements for a Unit.

Unit By Unit Transfer

The current situation for Unit-by-Unit transfer is provided as guidance (Appendix 5). Where a centre is in doubt about equivalences, advice should be sought from SQA Quality Assurance.

It should be stressed that the mapping is indicative and **the final decision for credit transfer arrangements is the responsibility of the centres. There is no automatic transfer of credit. The centres must enter the candidates for the new Units in the normal manner.**

7 General information for centres

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

Internal and external moderation

All instruments of assessment used within this/these Group Award(s) should be internally moderated, using the appropriate policy within the centre and the guidelines set by SQA.

External moderation will be carried out by SQA to ensure that internal assessment is within the national guidelines for these qualifications.

Further information on internal and external moderation can be found in SQA's *Guide to Assessment and Quality Assurance for Colleges of Further Education* (www.sqa.org.uk).

8 General information for candidates

The award is designed to articulate with HND Information Technology course offered across a range of educational institutions. Students successfully completing the HNC would be accepted onto the HND Information Technology and/or any other which may be introduced at the next stage of this review.

The HNC Information Technology award can be used as a foundation to move forward and articulate into HE in a multitude of award areas which have a hybrid content containing computing as a discipline. The SCQF should assist a candidate in achieving this move, however, an HNC on its own collects 96 SCOTCAT points to gain entry into the 2nd year of any degree course.

9 Glossary of terms

SCQF: This stands for the Scottish Credit and Qualification Framework, which is a new way of speaking about qualifications and how they inter-relate. We use SCQF terminology throughout this guide to refer to credits and levels. For further information on the SCQF visit the SCQF website at www.scqf.org.uk

SCQF credits: One HN credit is equivalent to 8 SCQF credit points. This applies to all HN Units, irrespective of their level.

SCQF levels: The SCQF covers 12 levels of learning. HN Units will normally be at levels 6–9. Graded Units will be at level 7 and 8.

Subject Unit: Subject Units contain vocational/subject content and are designed to test a specific set of knowledge and skills.

Graded Unit: Graded Units assess candidates' ability to integrate what they have learned while working towards the Units of the Group Award. Their purpose is to add value to the Group Award, making it more than the sum of its parts, and to encourage candidates to retain and adapt their skills and knowledge.

Dedicated Core Skill Unit: This is a non-subject Unit that is written to cover one or more particular Core Skills.

Embedded Core Skills: This is where the development of a Core Skill is incorporated into the Unit and where the Unit assessment also covers the requirements of Core Skill assessment at a particular level.

Signposted Core Skills: This refers to the opportunities to develop a particular Core Skill at a specified level that lie outwith automatic certification.

Qualification Design Team: The QDT works in conjunction with a Qualification Manager/Development Manager to steer the development of the HNC/D from its inception/revision through to validation. The group is made up of key stakeholders representing the interests of centres, employers, universities and other relevant organisations.

Consortium-devised HNCs and HNDs are those developments or revisions undertaken by a group of centres in partnership with SQA.

Specialist single centre and specialist collaborative devised HNCs and HNDs are those developments or revisions led by a single centre or small group of centres who provide knowledge and skills in a specialist area. Like consortium-devised HNCs and HNDs, these developments or revisions will also be supported by SQA.

10 Appendices

See following pages for appendices.

Appendix 1: National Occupational Standards

Appendix 2: Core Skills Grid

Appendix 3: Opportunities for e-assessment

Appendix 4: Credit Transfer Transitional Arrangements

Appendix 1

National Occupational Standards

This contains a mapping, in broad terms, between Higher National (HN) Units and National Occupational Standards (NOS) for practitioners and users developed by e-skills NTO (formerly ITNTO). The NOS Area of Competence (AOC) was taken from the NOS developed for the Information and Communication Technologies areas, published in 2004. While it is not intended to presume credit transfer between the awards, there may be opportunity to transfer credit from NOS to HN Units depending on whether:

- ◆ the AOCs relate to similar knowledge and skills
- ◆ the AOCs are contemporary in terms of terminology, techniques and technology
- ◆ the AOCs present a similar level of cognitive demand. (This should be determined using a recognised taxonomy, such as Bloom's.)
- ◆ the range of activities is similar in both Outcomes
- ◆ the standard of performance is equivalent in both Outcomes
- ◆ the assessment demands are similar in terms of candidate activity and Performance Criteria, or candidates would be equally likely to pass both assessments
- ◆ special conditions, (such as the location of assessment; for example, some NOS require assessment to take place in the workplace) where they exist, are applicable to both Outcomes

The level of AOC has been determined by using the Scottish and Qualifications Framework (SCQF), which brings together all Scottish mainstream qualifications into a single, unified framework. An excerpt of this is shown in the Table 1 below, where the SVQ level has been estimated from inspection of NOSs.

Table 1			
SCQF level	SQA National Units, Courses and Group Awards	Higher Education	SVQs and level
8		Higher National Diploma Diploma in Higher Education	4
7	Advanced Higher Certificate in Education	Higher National Certificate	
6	Higher		3
5	Intermediate 2 Credit Standard Grade		2

‘The positioning of SVQs in the table gives a broad indication of their place in the framework. Like most Group Awards, SVQs are likely to be made up of Units at a number of levels. The current placing of SVQ 3 at level 6 is based on the way in which SVQs are positioned in statutory documents and national targets. However there is a view that in some sectors, SVQ 3 could be placed at level 7. A project to refine the position of SVQs in the framework reported in January 2003, and the recommendations from it are being taken forward at UK level.’ (Quoted from Scottish Qualifications Authority, 28th January 2004 See web address: www.sqa.org.uk/sqa/sqa_nu_display.jsp?pContentID=4608&p_applic=CCC&p)

In Tables 2 to 8 following, AOC level 4 has been used for the mapping exercise. However if a level 4 AOC does not exist for the NOS, a level 3 AOC has been utilised if the said AOC seems to be similar in content and nature to the HN Unit Outcome(s) being mapped.

Depending on how the following Units are taught by centres, it is considered that it is possible to transfer credit from the NOS to the HN Units. The smallest element of credit transfer is an Outcome. Sub-Outcome components are not accredited.

Unit Title: Computing: Planning
Unit Code: DH35 34

Table 2		
National Occupational Standard AOC	Elements Knowledge and Understanding Skills and Techniques	Outcome(s) in this Unit
Investigating and Defining Requirements (level 4)	<p>Obtain and analyse client/customer information to identify system requirements.</p> <p>Understanding relevant client/customers needs and constraints and analysing information to identify these.</p> <p>Awareness of defects, which can arise in information. Checking identified needs, constraints and priorities with client/customer. Clearly recording the results of analyses to agreed formats. Producing requirements definitions.</p>	1

Unit Title: Software Development: Event Driven Programming
Unit Code: DH34 35

Unit Title: Software Development: Developing for the World Wide Web
Unit Code: DH32 35

(Unit(s) mapping dependant on programming language(s) used. Both NOS are utilised to achieve HN Unit Outcomes.)

Table 3		
National Occupational Standard AOC	Elements Knowledge and Understanding Skills and Techniques	Outcome(s) in these Units
Software Development — Design (level 4)	<p>Create Designs and test specifications for software.</p> <p>Knowledge of what software development procedures are applicable to projects. The contents of requirements definitions, software designs, test specifications. Functionality and capability of available runtime environments. Interpretation of requirements definitions. Creation of software designs, technical architecture, test specifications, selection and defining appropriate runtime environments. Following relevant organisational software development procedures.</p>	1,2,3
Software Development Component Creation (level 3)	<p>Create Software from given specifications. Knowledge of the syntax and constructs of the programming language(s) in use, use of available pre-defined functions of said programming languages(s). Creation of detailed designs for software from given specifications. Creation of software components, building, testing and debugging software. Using software development environment(s) effectively. Selection of meaningful identifiers for all components and constituent parts.</p>	

Unit Title: Database Design Fundamentals
Unit Code: DV6E 34

Table 4		
National Occupational Standard AOC	Elements Knowledge and Understanding Skills and Techniques	Outcome(s) in this Unit
Data Analysis and Data Structure Design (level 3)	Fields: types, properties Entities: identification, naming, relationships, identification, naming, attributes, normalisation, keys, indices, notation for data modelling Client requirements, Entry points, access paths, navigation. Data and access volumes Production of data dictionaries	1

Unit Title: Developing Skills for Personal Effectiveness
Unit Code: DF4D 33

Table 5		
National Occupational Standard AOC	Elements Knowledge and Understanding Skills and Techniques	Outcome(s) in this Unit
Develop Personal and Organisational Effectiveness (levels 3 and 4)	Role of the individual, personal attributes, impact on effectiveness at work, identification of own development needs, development plan.	1

The following NOS for users at level 3 were mapped against HN Units, though according to Table 1 this would not seem appropriate at this time. However, it may be appropriate in the future if level 3 SVQ/NVQs were positioned at level 7 in the SCQF framework.

Unit Title: IT in Business: Word processing, Spreadsheets and Databases: Introduction
Unit Code: DE24 33

Table 6		
National Occupational Standard AOC	Elements Knowledge and Understanding Skills and Techniques	Outcome(s) in this Unit
Word Processing Software	Complex word processed documents, integration with other packages	1,4
Spreadsheet Software	Technically complex spreadsheets, integration with other packages	2,4
Database Software	Database Design, modification, entering, editing, sorting data, production of reports, queries, integration with other packages	3,4

Unit Title: IT in Business — Spreadsheets
Unit Code: DE1M 34

Table 7		
National Occupational Standard AOC	Elements Knowledge and Understanding Skills and Techniques	Outcome(s) in this Unit
Spreadsheet Software	Production of information that is well structured and fit for its purpose, production of technically complex spreadsheets	1
	Analysis and interpretation of complex data	2
	Creation and extensive formatting of a wide range of charts	3
	Using appropriate formulae and functions in technically complex spreadsheets	

Unit Title: IT in Business — Databases
Unit Code: DE1N 34

Table 8		
National Occupational Standard AOC	Elements Knowledge and Understanding Skills and Techniques	Outcome(s) in this Unit
Database Software	Principles of database design, including purpose, use and structure Multiple table databases. Field characteristics – examples: attributes, primary key, relationships, data integrity Principles of database design, including purpose, use and structure. Entering, formatting data Queries Reports	1

Centre recruiting staff may find it beneficial to study the prospective HN candidate’s portfolio of work to ascertain levels of achievement incorporated in the said portfolio. As NOS level 3 is not considered to be equivalent to SCQF level 8, no attempt has been made to map level 3 user NOS against SCQF level 8 HN Units. However it may be that a candidate has some outstanding work where a NOS level 4 does not exist. This would not preclude a candidate from accessing credit transfer. For instance, if a candidate was in possession of NOS, Specialist or Bespoke Software, or if the candidate had used an accounting application, again, he/she may achieve all or part of *DE59 34 Using Financial Accounting Software*.

Recommended Entry Level NOS

While it is recognised that the holder of a level 3 S/NVQ for IT users does not assume that the candidate has achieved all elements of the award at level 3 (as in addition to higher level tasks, his/her role in the workplace may also include some at lower levels) the mandatory Unit value would be level 3 and at least 50% of the Unit value of the optional Units at level 3. (SVQ/NVQ Qualification Structure for IT Users, 27 November 2003). This may be regarded, depending on the centre, as entry qualification to the HNC award.

A group of relevant NOS (practitioner’s Units) at level 3, again at the discretion of each centre, may also be considered as entry level to the HNC award.

Recommended Exit Level NOS

As the NOSs were designed to be delivered in the workplace, candidates who had achieved an HNC award could be recommended to any of the NOSs detailed above where the NOS possessed a level 5 AOC.

However depending on the area of work the said candidate entered he/she may be recommended to undertake the following NOS Imported Unit(s) which are broadly based and common to the more responsible occupations within many types of employment.

Managing People and Resources	level 5
Managing Quality	level 5
Project Management	level 5
Supporting Learning and Development	level 5

Conclusion on Mappings

Perhaps not surprisingly, it would appear that there are some matches between HN Units and NOSs.

To aid candidate entry to the HNC award it is recommended that staff advising candidates on entry levels to HN awards take work based NOSs into account to place the candidate on the level of course where s/he is most likely to make progress.

Especially in the case of candidates who already have occupations in Computing or IT, it would be helpful to candidates if they were advised of NOSs towards which they might focus their ambition.

In short, national standards should be used to help candidates to enter HN education, and HN Units and awards, once achieved, should where possible be used to help candidates gain further recognition within national standards.

Appendix 2

Core Skills Signposting Grid

There may be opportunities to gather evidence towards Core Skills or Core Skills components in the following Units.

Unit Title	Communication	Information Technology	Numeracy	Problem Solving	Working With Others
Database Design Fundamentals	✓				
IT in Business: Word processing, Spreadsheets and Databases: Introduction		✓	✓		
Developing Skills for Personal Effectiveness				✓	
Personal Development Planning				✓	
Work Role Effectiveness (2003)	✓				
Information Technology: Information Systems and Services		✓			
SQL: Introduction		✓			
e-commerce: Introduction		✓			
e-marketing		✓			
e-commerce: Publishing Websites		✓			
Computing: Planning				✓	

Unit Title	Communication	Information Technology	Numeracy	Problem Solving	Working With Others
Human Computer Interface		✓			
Software Development: Event Driven Programming		✓		✓	
Systems Development: Introduction				✓	
Software Development: Developing for the World Wide Web		✓		✓	
Computer Operating Systems 1		✓			
Multi User Operating System		✓			
Human Resource Management	✓				
Marketing: An Introduction	✓				
Recording Financial Transactions				✓	
Using Financial Accounting Software		✓			
Functional Areas of Business	✓				

Appendix 3

Opportunities for e-Assessment

As part of an assessment strategy, it makes sense to investigate the option of e-assessment to support the programme. E-assessment may take a number of forms, and while it may be feasible in the future to conduct all assessment in an on-line format, currently some formats are more amenable to e-assessment than others.

The most obvious format is that of objective tests and some SQA Units already have an Evidence Requirement mandating the use of this type of test.

This section notes the Units where the possibility of e-assessment exists, and speculates on which may be suitable in the near future.

Objective testing e-assessment opportunities		
Unit Title	Code	Outcome
PC: First Line Support	DV6L 34	1
Information Technology: Information Systems and Services	DH37 34	1,2
Software Development: Event Driven Programming	DH34 35	2 (part)
Software Development: Developing for the World Wide Web	DH32 35	3 (part)
Graded Unit: Examination	DV6D 34	Section 1 (part)

e-portfolio opportunities			
Unit Title	Code	Outcome	Type
Working within a Project Team	DH21 34	1	Project Proposal
Working within a Project Team	DH21 34	2	Project Documentation
Working within a Project Team	DH21 34	3	Project Report
Developing Skills for Personal Effectiveness	DF4D 33	1 and 3	Action Plan
Personal Development Planning	DE3R 34	1 and 2	Personal Development Portfolio
Personal Development Planning	DE3R 34	3	Personal Appraisal Report
e-commerce:Introduction	DV6F 34	1,2 and 3	Case Study

The following table signposts further e-assessment opportunities.

Unit Title	Multiple Choice/Multiple Response Questions	e-Portfolio	e-Log Book
IT in Business: Databases		✓	✓
IT in Business: Spreadsheets		✓	
Working within a Project Team		✓	
Software Development: Applications Development		✓	
PC: First Line Support			✓
Graded Unit: Examination	✓		
IT in Business: Word processing, Spreadsheets and Databases: Introduction		✓	
Developing Skills for Personal Effectiveness		✓	
Personal Development Planning		✓	
Work Role Effectiveness (2003)		✓	
Information Technology: Information Systems and Services	✓	✓	
SQL: Introduction		✓	
e-commerce: Introduction		✓	
e-marketing	✓	✓	
e-commerce: Publishing Websites		✓	
Computing: Planning		✓	
Human Computer Interface		✓	
Software Development: Event Driven Programming		✓	
Systems Development: Introduction		✓	
Software Development: Developing for the World Wide Web		✓	
Computer Operating Systems 1			✓
Multi User Operating System			✓
Human Resource Management	✓		
Marketing: An Introduction	✓		
Recording Financial Transactions		✓	
Using Financial Accounting Software		✓	
Functional Areas of Business	✓		
Statistics for Business		✓	

Appendix 4

Credit Transfer Transitional Arrangements

Table 1			
Previous		2005 Framework	
Unit No.	Unit title	Unit No.	Unit title
D75W 34	Multimedia: Developing Multimedia Applications (2)	DH2R 34	Multimedia: Developing Multimedia Applications (2)
A6AL 04 D75Y 34	Information Systems and Services (1) OR Information Technology: Information Systems and Services (1)	DH37 34	Information Technology: Information Systems and Services (1)
A6B5 04 D76R 35	Software Development: Event Driven Language (2) OR Software Development: Event Driven Programming (2)	DH34 35	Software Development: Event Driven Programming (2)
A6B0 04 D76W 34	Software Development Life Cycle (1) OR Software Development: Program Planning (1)	DH35 34	Computing: Planning (1)
A6AE 04	Applications Development (2)	D76N 34	Software Development: Applications Development (2)
D5V4 34	Introduction to SQL (1)	DE3J 34	SQL: Introduction (1)
A6B4 04 D77D 34	Systems Development: Introduction (2) OR Systems Development: Introduction (2)	DH3F 34	Systems Development: Introduction (1)
A6B3 04 D77A 34	Standalone Computer System Support (2) OR Computer Operating Systems (2)	DH33 34	Computer Operating Systems (1)
A6AT 04 D76G 34	Multi User Operating System (1) OR Multi User Operating Systems (1)	DH3A 34	Multi User Operating System (1)
A6H8 04 DG6D 34	Introduction to Marketing Work Role Effectiveness (1988)	DE34 04 DG6E 34	Marketing: An Introduction Work Role Effectiveness (2003)

Table 2			
Previous		2005 Framework	
Unit No.	Unit title	Unit No.	Unit title
A6GE 04	UITB Spreadsheet and Word Processing	DE1M 34	IT in Business – Spreadsheets Credit transfer Outcomes 1 & 2, No credit transfer Outcome 3.
A6GD 04	UITB Database and Word Processing	DE1N 34	IT in Business – Databases Credit transfer Outcome 1, Outcomes 2 & 3 part credit transfer

Table 1 gives the alternative route for candidates transferring from a previous award to the 2005 Award and may be used in both directions (previous → 2005 and 2005 → previous) unless indicated otherwise.

There may be opportunities to transfer credit on an Outcome-by-Outcome basis and two examples are shown in Table 2.

Although the 1995 Unit may be vocationally equivalent, the credit transfer is only complete if there is evidence of Core Skills. Each presenting centre must assure themselves that the embedded Core Skills (*Information Technology — Higher, Communication, Working with Others — Higher and Numeracy — Intermediate 2*) in the 2001 and 2004 awards have been met although not stated in the 1995 HN Unit specifications.

Centres should be sensitive to opportunities for candidates for Accredited Prior Learning or credit transfer. For previous awards/Units not detailed in Tables 13, 14 and 15, further guidance may be sought from SQA. The following criteria are normally used by SQA to determine equivalencies. Note that all the following criteria must be satisfied if full credit transfer is to be recognised between the Units:

- ◆ the Units/syllabuses must have the same SCQF levels
- ◆ the Units/syllabuses must have similar credit values
- ◆ the Units/syllabuses are equivalent in terms of Core Skill coverage
- ◆ the Units/syllabuses relate to the same subject area and the main topics are common to both
- ◆ the Units/syllabuses present a similar level of cognitive demand¹
- ◆ the Units/syllabuses cover similar skill-sets
- ◆ the Units/syllabuses are contemporary in terms of terminology, techniques and technology
- ◆ employers, admissions officers and others would perceive both Units/syllabuses are broadly equivalent
- ◆ the assessment demands are similar in terms of candidate activity and Performance Criteria or candidates would be likely to achieve both assessments
- ◆ special conditions ²(where they exist) are applicable to both Units/syllabuses

¹ This should be determined using a recognised taxonomy (such as Bloom's).

² Such as the location of assessment. For example, some SVQs require assessment to take place in the workplace.