

Research and Information Services

Monitoring Standards Report



HNC Computing (G7GL)

Introduction

SQA has been carrying out an annual monitoring standards programme since 1998. The exercise plays a very important role in ensuring that we continue to offer qualifications of a consistently high standard. The process involves scrutinising candidate evidence, assessment material and marking guidelines for the current year and comparing these with archived evidence from a previous year's exercise where available, to judge if standards are being maintained over time. Centres with candidates taking the units in the current sample are asked to submit the work of two candidates who have been awarded a bare pass and whose evidence as far as possible exemplifies the standard for the qualification. HN unit specifications for both the current and comparator years are made available to the scrutiny teams. The panels are chaired by the Senior Verifier (mostly) and the other two members of each group are an experienced verifier and where possible an external specialist from Higher Education or an expert from industry or related sector. The Units scrutinised were:

- ◆ DH2T 34 Computer Architecture
- ◆ DH37 34 Information Technology: Information Systems and Services
- ◆ DH3A 34 Multi User Operating Systems

1 Source documents

The comparator year was 2003, which used the framework set up in 1995. Since then there have been two changes to the award framework, the first of which was a pilot framework introduced in 2001, and the current framework introduced in 2005. A large number of centres were sampled (24 out of 32 delivering the framework), representing a good spread of colleges in terms of size and geography.

Part of the rationale for the new framework was a perceived requirement for new approaches to assessment, such as assessment online. Assessment methodology in the Units scrutinised differs radically from that used in the previous framework and Units. In all three Units, multiple-choice questions are now used for the assessment of at least one of the Outcomes.

In the previous framework, all three Units scrutinised were mandatory. In the current framework, only Computer Architecture remains mandatory. This has resulted in a significantly reduced uptake for Information Systems and Services.

The previous Computer Architecture Unit has been, in effect, split into two: Computer Architecture 1 and 2. Assembly language has been moved into the second of these Units, which is not mandatory. The knowledge and skills contained within Computer Architecture 1 are now considered a satisfactory introduction to the subject.

Multi User Operating Systems has been updated to include scripting.

The reading lists for Multi User Operating Systems are out of date, and contain no reference to the actual operating system that many centres will be using.

Most centres using the new HNC Computing use it as a broad-based, common first year to allow candidate progress into different specialist HND awards.

The Panel feels that the Units provided for comparison should all have come from the mandatory section of the award. This would have improved the sampling.

2 Assessment instruments

In most cases, centres used the assessment exemplars issued by SQA for the sole mandatory Unit scrutinised. SQA exemplars do not exist for the other two selected units.

With respect to Computer Architecture 1, some centres used the SQA exemplars, some used instruments based on them, and one or two developed their own.

Although no exemplar exists for the current Multi User Operating Systems, many centres used material from previous exemplars and adapted them, where necessary, to match the new assessment criteria.

Overall, the Panel found that assessment instruments were fit for purpose, providing a realistic and appropriate level of assessment demand for candidates.

In the main, the presentation of assessment materials was of a high standard.

Within the sample of materials available for the three Units examined, there was no evidence that prior verification had taken place. Similarly there were no examples of assessment integration presented on this occasion.

Most centres had developed good practices in their approach to internal verification of assessment material and candidate evidence, however in more than a few centres, there was little or no evidence presented of internal verification activity taking place. The Panel had similar findings with respect to conditions of assessment and pass criteria. While it has been

assumed that this information is provided for candidates in a verbal form, it would be good practice to provide this information in writing.

3 Evidence of candidate performance

On the whole, the Panel found that assessor feedback had reduced over time, but that there were, on the contrary, some instances of extremely good practice in the current materials in this respect.

There was evidence of internal verification of candidate submissions in about half the cases scrutinised.

On the whole, the assessment decisions made by centres were felt to be accurate, though there were some differences noted by Panel members.

There was a fairly wide variation in the quality of presentation exhibited by candidates. For example, it was often apparent that candidates needed guidance in the construction of diagrams.

4 Comparing standards over time

Overall, the Panel felt that the assessment decisions made, had been consistent over time.

The Panel agreed that the new Units set a more realistic and appropriate standard for work at this level. In the previous framework, candidates had to provide more evidence than is required currently.

The Panel thought that within the sample of materials presented for this year's scrutiny, there was a tendency for candidates to produce the minimum required as evidence. This was less evident in the comparator year.

5 Conclusions

The Panel felt that, on the whole, the level of challenge (due to changes in assessment and content of the curriculum as part of the HN Modernisation programme) has gone down over time in the Units scrutinised, though there are one or two contrary instances. The content and assessment is now considered appropriate for the level of the award (SCQF level 7).

Where the subject matter has remained the same, standards have been maintained.

Methods of assessment introduced into the new framework make less demand on the literacy and communication skills of candidates.

About half the centres failed to provide evidence demonstrating either internal verification or prior verification of instruments of assessment and candidate evidence.

6 Recommendations for centres

It is recommended that centres continue to work to improve standards of assessment, including

- ◆ Providing feedback to candidates.

- ◆ Ensuring that internal verification procedures are in place.

- ◆ Detailing of conditions of assessment and criteria for achievement.

7 Recommendations for SQA

- ◆ In future when choosing Units for scrutiny, the uptake should be sufficiently large to make the sample size valid for comparison purposes.

Initial Response

SQA notes the recommendation for the next time the HNC in Computing is selected for standard monitoring and this will be taken to QST for their consideration.

Appendix: Unit report

1 The Units

Unit	Main Purpose	Candidate Profile	Uptake
DH2T: Computer Architecture	The main purpose is to develop broad general knowledge and understanding of the theoretical concepts, principles, boundaries, and scope of the mechanisms that underpin the use of, and operation of, digital computers.	It is intended for those who wish to undertake further study or find employment in the fields of computer programming, computer technical support, and media production.	Currently around 32 centres within Scotland are involved in the delivery of this Unit which is mandatory within the current HNC Computing framework. In addition, it is delivered in overseas centres in China and the Middle East. Materials had been presented from 24 centres, providing two candidates each.
DH37: Information Technology: Information Systems and Services	The main purpose is to provide candidates with an awareness of the different aspects of information systems and services and how these may be used in differing organisations.	It is intended for those who wish to undertake further study or find employment using information systems within organisations.	Currently around 32 centres within Scotland could be involved in the delivery of this Unit, which is not mandatory within the current HNC Computing framework. In addition, it may be delivered in overseas centres in the Middle East. Materials had been presented from three centres, providing two candidates each.
DH3A: Multi User Operating Systems	The main purpose is to provide candidates with a practical introduction to, and understanding of, the main concepts of a multi-user operating system.	It is intended for those who wish to undertake further study on, or find employment using, multi-user operating systems within organisations.	Materials had been presented from nine centres, providing two candidates each.

2 Assessment instruments

DH2T: Computer Architecture 1	
Fitness for purpose/ integration	Around half of the 24 centres had utilised SQA assessment exemplars, the remainder used assessment material that, overall, was found to be fit for purpose in meeting the Evidence Requirements of the Unit specification. There was no indication that assessment instruments which had been developed by centres had been prior verified. Centres which used their own assessments generally followed the model set by the exemplar. Some centres were using online testing, particularly for Outcome 1.
Quality of presentation	Overall, the candidates' materials were well presented and to a good or very good standard. It was noted that in one of the Outcomes, where a diagram was required, this was generally poorly done. This is a skill which candidates will require in the future, particularly within the award of HNC/HND Computing.
Level of demand	It was felt that the level of demand of assessments submitted was at the standard required by the Unit specification.
Conditions of assessment	Overall, these were correctly stated. Only one centre had submitted instruments of assessment in which the conditions set were not appropriate.
Guidance on criteria for pass and validity to PCs and range/summary	Whilst all guidance outlined by centres complied with the Unit specification, the Panel found two examples where guidance on criteria for a pass was not explicitly stated on the assessments or other materials presented to candidates. In the case of one centre, the Panel also doubted whether candidates had received any guidance.

DH37: Information Technology: Information Systems and Services	
Fitness for purpose/ integration	There is no SQA assessment exemplar for this Unit. Overall, the assessment instruments submitted by centres were found to be fit for purpose in meeting the Evidence Requirements of the Unit specification. There was no indication that assessment instruments which had been developed by centres had been prior verified. Centres generally followed the model set by the exemplar from the equivalent Unit of the previous framework where criteria matched.
Quality of presentation	Overall, the candidates' materials were well presented and were of a good or very good standard.
Level of demand	It was felt that the level of demand of assessments submitted, was of the standard required by the Unit specification.
Conditions of assessment	In general, these were in good order and were clear and appropriate. However, in one of the centres, it was not evident that candidates had received this guidance.
Guidance on criteria for pass and validity to PCs and range/summary	All guidance outlined by centres complied with the Unit specification. In the case of one centre, the Panel doubted whether candidates had received any guidance.

DH3A: Multi User Operating Systems	
Fitness for purpose/ integration	There is no SQA assessment exemplar for this Unit. The assessment instruments were found overall to be fit for purpose in meeting the Evidence Requirements of the Unit specification. There was no indication that assessment instruments which had been developed by centres had been prior verified. Some centres used online testing for Outcome 1.
Quality of presentation	Overall, the candidates' materials were well presented and were of a good or very good standard.
Level of demand	It was felt that the level of demand of assessments submitted, were at the standard required by the Unit specification. However, the feeling was that for Outcome 3, the level of requirements and subsequent submissions were minimalist for this important topic.
Conditions of assessment	Four centres had submitted instruments of assessment in which the conditions set were not specified. Five centres provided the candidates with full conditions of assessment which were appropriate to the Unit. In two centres, candidates were not given information on the duration of the assessment.
Guidance on criteria for pass and validity to PCs and range/summary	Evidence was found in six out of nine centres that guidance on criteria for a pass was not explicitly stated on the assessments or other materials presented to candidates. There was doubt in the case of one centre as to whether candidates received any guidance. All guidance outlined by the remaining two centres complied with the Unit specification.

3 Evidence of candidate performance

Overall	
Examples of good assessment practice/summary	<p>There were several examples of useful and pertinent feedback from assessor to candidate. This also helps facilitate the verification and internal standardisation processes.</p> <p>In a few cases good analyses of real-world organisations' information systems were studied and effectively evaluated.</p> <p>The developing and use of online versions of the assessment tests.</p>
Comparison over time	<p>Although there has been a change in the level of demand, the Panel considered that the current standards are more realistic, appropriate, and a better fit with the time available to deliver the Unit</p> <p>The centres' interpretation of current Evidence Requirements is as rigorous when compared to the comparator year.</p> <p>Generally, assessment practices are not improving over time. Current submissions from candidates are generally less clear and minimalist compared to previous years. Current marking practices are not as detailed as in previous years.</p>
DH2T: Computer Architecture 1	
Accuracy of assessment decisions	<p>Out of 47 candidates' evidence, there were eight disagreements between the Scrutiny Panel members and the centres' judgement of candidates' performance. It was noted that four candidates' work was judged to be at a higher level than the decision made by these centres and four were judged by the team to be at a lower level.</p>
Consistency of application of standards	<p>Overall, the instruments of assessment within centres were found to be of a consistent standard. However, one centre used an instrument of assessment which did not meet the Unit specification. There were 14 centres where the instruments of assessment had been internally verified. There were 13 examples out of 24 centres where candidates' work had been subject to internal verification. While internal verification of instruments of assessment and candidate evidence may have taken place, almost half of the centres failed to make it evident by submitting this information with assessment material.</p>
DH37: Information Technology: Information Systems and Services	
Accuracy of assessment decisions	<p>Out of six candidates there was one disagreement between the Scrutiny Panel members and the centres' judgement of candidates' performance.</p>
Consistency of application of standards	<p>Overall, the assessment decisions within centres were found to be consistent. There was one centre where the instruments of assessment had been internally verified. There were two examples out of three centres where candidates' work had been subject to internal verification. In one centre there was no evidence of internal</p>

	verification.
DH3A: Multi User Operating Systems	
Accuracy of assessment decisions	<p>Out of 18 candidates there was one disagreement between the Scrutiny Panel and the centre's judgement of candidates' performance.</p> <p>Evidence of the assessment decision for candidates' work was not provided by two centres.</p>
Consistency of application of standards	<p>Overall, the assessment decisions within centres were found to be consistent.</p> <p>However, one centre used an instrument of assessment which did not meet the Unit specification. There were five centres where the instruments of assessment had been internally verified. In six centres out of nine, candidates work had been subject to internal verification. There were two centres where no internal verification was evident.</p>