Higher National Graded Unit specification

General information for centres

This Graded Unit has been validated as part of the Computing: Technical Support. Centres are required to develop the assessment instrument in accordance with this validated specification. Centres wishing to use another type of Graded Unit or assessment instrument are required to submit proposals detailing the justification for change for validation.

Graded Unit title: Computing: Technical Support: Graded Unit 2

Graded Unit code: DN4P 35

Type of Graded Unit: Project

Assessment Instrument: Practical Assignment

Credit points and level: 2 HN credits at SCQF level 8: (16 SCQF credit points at SCQF level 8*)

*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.

Purpose: This Graded Unit is designed to provide evidence that the candidate has achieved the following principal aims of the HND Computing: Technical Support:

♦ To prepare students for employment in an IT/Computing-related post at technical or professional level in technical or network support.

♦ To develop a range of contemporary vocational skills, ie technical computing skills relating to the use and support of IT systems appropriate to employment at technician (or equivalent) level.

Recommended prior knowledge and skills: It is recommended that the candidate should have completed or be in the process of completing the following Unit relating to the above specific aims prior to undertaking this Graded Unit:

♦ DH35 34   *Computing Planning*

Core Skills: This Unit gives automatic certification of the Core Skill of *Problem Solving* at SCQF level 6.

General information for centres (cont)

Assessment: This Graded Unit will be assessed by the use of a practical assignment. The Practical Assignment should provide the candidate with the opportunity to produce evidence that demonstrates she/he has met the aims of this Graded Unit.

Assessment is based on the **product, its evaluation** and the planning and development **process.**

A candidate must:

♦ interpret the needs of the project from the brief
♦ gather information to plan and develop the project
♦ decide upon and develop a design approach
♦ carry out the development
♦ evaluate the product and process
♦ evaluate their own performance

Each candidate must undertake an individual project.

Administrative Information

Graded Unit code: DN4P 35

Graded Unit title: Computing: Technical Support: Graded Unit 2

Original date of publication: May 2005

Version: 02 (August 2009)

History of changes:

Version	Description of change	Date
02	Amended: Conditions of Assessment including minimum marks per stage, Minimum Evidence Requirements item detail and marks allocation, Conditions of assessment to include marking in stages, Instructions for designing assessment tasks. Corrected type of Assessment Instrument. Re-allocation of marks to be awarded for each stage.	12/08/09

Source: SQA

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

Additional copies of this Graded Unit specification if sourced by the Scottish Qualifications Authority can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates

Graded Unit title: Computing: Technical Support: Graded Unit 2

Conditions of assessment

The candidate should be given a date for completion of the Practical Assignment. However, the instructions for the assessment task should be distributed to allow the candidate sufficient time to assimilate the details and carry out the assignment. During the time between the distribution of the task and the completion date, assessors may answer questions, provide clarification, guidance and reasonable assistance. In the initial phase, submission dates should be agreed for each stage. Each stage of the assessment should be marked as soon as possible after each submission date. The final grading given should reflect the quality of the candidate's evidence at the completion date. Reassessment of this Graded Unit should be based on a significantly different assessment task. Remediation processes are detailed in the SQA publication *Guidance for the Implementation of Graded Units in Higher National Certificates and Diplomas*.

If a candidate is found to have cheated or to have gained an unfair advantage the assessor has the authority to deem that the candidate has failed the assessment. Candidates should provide references in the form of footnotes and/or bibliography for any materials used and/or accessed which is not their own. The practical assignment will be based on the development of a solution for a real client or on a scenario supplied by the centre. If the method selected by a centre is a scenario given to a number of candidates then the centre must ensure the originality and uniqueness of each candidate submission.

At this level, candidates should work independently. Each centre must ensure that the project is the authenticated work of the individual candidate. For example, centres may wish to informally question candidates at various stages on their knowledge and understanding of the project on which they have embarked. Centres should ensure that where research etc, is carried out in other establishments or under the supervision of others that the candidate does not receive undue assistance.

If a candidate fails the project overall or wishes to upgrade, then this must be done using a *substantially different* project, ie all stages are undertaken using a new project, assignment, case study, etc. In this case, a candidate's grade will be based on the achievement in the re-assessment, if this results in a higher grade.

Instructions for designing the assessment task

The assessment task is a project. The project undertaken by the candidate must be a complex task which involves:

♦ variables which are complex or unfamiliar
♦ relationships which need to be clarified
♦ a context which may be familiar or unfamiliar to the candidate

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

The assessment task must require the candidate to:

♦ analyse the task
♦ identify the requirements for the project
♦ plan the solution for the project
♦ organise and document work to project completion
♦ develop the product to meet the solution
♦ test the solution tracking any changes and making amendments where required
♦ critically evaluate the approach taken developing the project and draw conclusions.
♦ the critical analysis should cover two areas:
  1 **product produced** — reflect on the product that has been produced, critically evaluating the approach and methods used in developing the project
  2 **individual reflective analysis** — a candidate should provide an evaluation of their activities drawing conclusions to help future performance
♦ produce evidence of meeting the aims which this Group Award Graded Unit has been designed to cover.

Guidance on grading candidates

Candidates who meet the minimum Evidence Requirements will have their achievement graded as C — competent, or A — highly competent or B somewhere between A and C. The grade related criteria to be used to judge candidate performance for this Graded Unit is specified in the following table.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

Grade A	Grade C
Is a seamless, coherent piece of work which:	Is a co-ordinated piece of work which:
◆ has sufficient evidence for all three stages of the project, is produced to a high standard, and is clearly inter-related.	◆ has sufficient evidence for all three stages of the project and is produced to an adequate standard.
◆ is complete and demonstrates the candidate's high level of performance from each stage, Planning, Developing, Evaluating.	◆ is complete and demonstrates the candidate's acceptable level of performance from each stage, Planning, Developing, Evaluating.
◆ demonstrates an accurate and insightful interpretation of the project brief.	◆ demonstrates an acceptable interpretation of the project brief
◆ is highly focused and relevant to the tasks associated with the project brief.	◆ is focused and relevant to the tasks associated with the project brief.
◆ is clear and well structured throughout and the language used is of a uniformly high standard in terms of level, accuracy and technical content.	◆ is satisfactorily structured and the language used is adequate in terms of level, accuracy and technical content.
◆ effectively consolidates and integrates the required knowledge and skills. uses resources effectively▪	◆ consolidates and integrates knowledge and skills, but may lack some continuity and consistency.

The project will be marked out of 100. Assessors will mark each stage of the project taking into account the criteria outlined. Candidates can only progress to the next stage if they have met the minimum Evidence Requirements of the previous stage. At the end of each stage, there should be opportunities for remediation/reassessment on that particular stage. Remediation processes are detailed in the SQA publication "Guidance for the Implementation of Graded Units in Higher National Certificates and Diplomas". All allocated marks will be aggregated to arrive at an overall mark for the project. Assessors will assign an overall grade to the candidate for this Graded Unit based on the following grade boundaries.

A = 70% — 100%
B = 60% — 69%
C = 50% — 59%

The candidate must achieve a minimum of:

◆ 20 marks for the Planning stage
◆ 20 marks for the Developing stage
◆ 10 marks for the Evaluating stage.

The following marking scheme must be used to grade candidate's work.

Note: the candidate must achieve all of the minimum evidence specified below for each stage of the project in order to achieve the Graded Unit.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

Evidence Requirements

The project consists of three stages: planning; developing; and evaluating. The following table specifies the minimum evidence required to pass each stage.

Note: The candidate must achieve **all of the minimum evidence** specified below for each stage of the project in order to pass the Graded Unit.

Project stage	Minimum Evidence Requirements

Stage 1 — Planning
 	
40% maximum
	The assessor's role is as a facilitator and so to gain high marks the candidate **must** demonstrate a high degree of autonomy in the planning activities.
	
	Evidence, in the form of a **report** containing the following:
	
	♦ an analysis of what is involved in the project — up to **6 marks**
	♦ aims of the project — up to **3 marks**
	♦ identification of the key factors influencing the project — up to **5 marks**
	♦ resources, materials and time available — up to **12 marks**
	  — identification
	  — utilisation
	♦ project plan — up to **10 marks**
	  — undertake the analysis using appropriate techniques.
	  — production of a project plan
	    - identifying main tasks — Analysis, Implementation, Testing
	    - identification of resources
	    - identifying milestones
	    - identifying schedules
	♦ justification of approach — up to **2 marks**
	♦ information sources used — up to **2 marks**
	
	The candidate must achieve all of the minimum evidence specified above in order to pass the Planning stage.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

Project stage	Minimum Evidence Requirements
Stage 2 — Developing 40% maximum	The assessor's role is as a facilitator and so to gain high marks the candidate **must** demonstrate a high degree of autonomy in the developing activities. Evidence of the candidate ♦ implementing the planned solution to the task and tracking the implementation — up to **30 marks** ♦ testing the implemented solution tracking any changes and making amendments where required — up to **8 marks** ♦ managing the project — up to **2 marks.** **The evidence may be recorded using appropriate techniques such as software, logbooks (electronic, manual or both), work diaries, reports etc.** *The candidate must achieve all of the minimum evidence specified above in order to pass the Developing stage.*

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

Project stage	Minimum Evidence Requirements
Stage 3 — Evaluating 20% maximum	The assessor's role is as a facilitator and so to gain high marks the candidate **must** demonstrate a high degree of autonomy in the evaluating activities. All of the evaluation should be in the form of a **report** showing the evaluation of the effectiveness of the approach/strategy taken, which includes all stages of the activity. The evaluation of the product should include: Up to **10 marks** for: ♦ the analysis of the project brief ♦ the project plan ♦ the effectiveness of the solution including strengths and weaknesses ♦ implementing the solution ♦ testing the implementation ♦ the documentation produced The evaluation of the candidate performance should include: Up to **10 marks** for: ♦ the outline of the assignment ♦ the handling of unforeseen events ♦ the identification of any knowledge and skills gained and/or developed ♦ evaluating the effectiveness of the problem solving activity in meeting the original scenario ♦ concluding how the process of carrying out the project could be improved ♦ recommendations for the future *The candidate must achieve all of the minimum evidence specified above in order to pass the Evaluating stage.*

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

Guidance on the content and context for this Unit

The project should be designed to meet the expectations of the aims and objectives of the HND Computing award, which are:

♦ To prepare students for employment in an IT/Computing-related post at technical or professional level in technical or network support.

♦ To develop a range of contemporary vocational skills, ie, technical computing skills relating to the use and support of IT systems appropriate to employment at technician (or equivalent) level.

The assessor should meet the candidate regularly to discuss their progress through the stages. These meetings should be treated by the assessor as a management review of the candidate's activities keeping track of the progress of the project comparing the actual with the planned progress. This will allow the assessor to modify deliverable dates (in agreement with the candidate) so that the candidate manages to complete the work in the required time. An assessor should take a 'project' approach to this Graded Unit with a candidate delivering a coherent piece of work. The project undertaken should provide the candidate with the opportunity to develop knowledge and skills gained in the other Units of study.

An assessor should ensure that the project allows a candidate to produce the required evidence at SCQF level 8.

Plagiarism is a major issue for assessors in education and the assessor must ensure the authenticity of the candidate evidence. A candidate should be formally issued with the statement, which follows:

Plagarism

Assessors are required to ensure the authenticity of the candidate's work. Regular progress meetings are one way of ensuring that the candidate's work is their own. The opportunity should be taken at these meetings to use probing questions to authenticate the assessment material. Plagiarism is a potential issue with written work. Assessors must ensure that the candidate is aware of their centre's plagiarism policy and ensure that submitted material is consistent with that policy. Further advice about plagiarism is available from SQA.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

Guidance on the content and context for this Unit

It is recommended that the candidate should have completed or be in the process of completing the following Units related to the specific aims of the award prior to undertaking this Group Award Graded Unit.

♦ DM3D 35 **or** F0N0 35 *Professional Issues in Computing*
♦ DM30 35   *Project Management 1*
♦ DM2X 35   *Computer Operating Systems 2*
♦ D75V 35   *Computer Networks: Network Technology and Data communications*
♦ DF9M 34   *Client Operating Systems*
♦ DF9N 34   *Network Server Operating System*

The project brief should include a sample of topics and issues selected from the following list of Outcomes from mandatory Units. The assessor may want to consider some suggestions in the table below.

Unit code	Unit title	Topics /Issues
DH35 34	Computing Planning	1 Produce a precise specification from a given brief. 2 Derive a detailed design for the required specification. 3 Produce a test plan for the required specification.
DM3D 35 **or** F0N0 35	Professional Issues in Computing	1 Describe legislation applying to the computer profession in terms of: ♦ Protection of the environment ♦ Health and Safety ♦ Intellectual Property Rights ♦ Disability Discrimination and/or other appropriate legislation applicable to the project.
DM30 35	Project Management 1	1 Develop and manage an appropriate plan using 2 Project Management Software. 3 Produce standard and customised reports as required.
DM2X 35	Computer Operating Systems 2	1 Automate Operations by creating a batch file or shell script to carry out automated tasks. 2 Create login script(s).
D75V 35	Computer Networks: Network Technology and Data Communications	1 Define characteristics and construction of LANs and WANs (as appropriate to the project specification).
DF9M 34	Client Operating Systems	1 Install an appropriate client operating system. 2 Implement and administer resources (hardware and software).
DF9N 34	Network Server Operating System	1 Manage and maintain physical and logical devices. 2 Manage users, computers and groups. 3 Manage and maintain access to resources.

Higher National Graded Unit specification: Instructions for designing the assessment task and assessing candidates (cont)

Note: The list of Topics/Issues in the above table is not exhaustive. Depending on the characteristics of the project brief, the assessor may draw Outcomes from other Units in the HN framework provided such Units were undertaken by the candidate.

Using ICT to Support Assessment

There is opportunity for peer evaluation of product design and implementation. The candidates may be inclined to do this anyway but would benefit from a more formalised approach. The assessor must re-iterate to the candidates that direct copying of work is not allowed, but in industry it would be normal practice to confer with colleagues and stimulate discussion, which may assist with problem solving.

Candidates should be encouraged to produce an e-portfolio of all work, or a digitised log-book. This may lift barriers for distance learning students. If e-portfolios and or log-books are used the assessor should consult the following SQA Publications:

♦ *SQA Guidelines on Online Assessment for Further Education* (March 2003)
♦ *Assessment and Quality Assurance in Open & Distance Learning* (February 2001)

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**