



Higher National Graded Unit specification

General information for centres

This Graded Unit has been validated as part of the HNC Multimedia Computing: Web Development: Graded Unit 1. 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: Multimedia Computing: Web Development: Graded Unit 1

Graded Unit code: DF6E 34

Type of Graded Unit: Project

Assessment Instrument: Practical Assignment

Credit points and level: 1 HN credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

**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 HNC Multimedia Computing: Web Development award:

- ◆ To development the candidate's knowledge and skills in planning, analysing, implementing, testing and evaluating.
- ◆ To develop study and research skills.
- ◆ To prepare candidates for employment in a Multimedia or Web-related post as a junior Multimedia developer or Web developer.
- ◆ To develop a range of contemporary vocational skills, ie technical and team working skills relating to the use and support of Multimedia and Web systems appropriate to employment at elementary development levels.

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

- ◆ DF63 34: *Multimedia Computing: Interface Design and Authoring*
- ◆ DF69 34: *Multimedia Computing: Screen Based Graphics*
- ◆ DF60 35: *Internet: Web Development*

General information for centres (cont)

Since this contains the Core Skills of Problem Solving and Working with Others, the candidate should also have some underpinning knowledge of the skills associated with Problem Solving and the processes involved in working as a team member in order for her/him to demonstrate these skills and function effectively at Higher level.

Core Skills: The achievement of this Unit gives automatic certification of the following: Problem Solving at SCQF level 6 and Working with Others at SCQF level 6.

Assessment: This Graded Unit will be assessed by the use of a Practical Assignment. The ‘fleshed-out’ detailed task set should provide the candidate with the opportunity to produce evidence that demonstrates she/he has met the aims of the Group Award that this Graded Unit covers.

The assessment is based on the product, its evaluation and the process. A candidate must:

- ◆ Interpret the needs of the brief
- ◆ Gather information to clarify the brief
- ◆ Decide and develop a design approach
- ◆ Carry out the development
- ◆ Evaluate the product and their performance

Each candidate **should undertake an individual project.**

Administrative Information

Graded Unit code: DF6E 34

Graded Unit title: Multimedia Computing: Web Development: Graded Unit 1

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History of changes:

Version	Description of change	Date
02	Result of Core Skills audit	08/12/06
03	Detailed distribution of marks added to Planning, Reviewing & Evaluating Stages	31/07/07

Source: SQA

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

Graded Unit title: Multimedia Computing: Web Development: Graded Unit 1

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 assessment task. During the time between the distribution of the assessment task instructions and the completion date, assessors may answer questions, provide clarification, guidance and reasonable assistance. The assessment task should be marked as soon as possible after the completion date. The final grading given should reflect the quality of the candidate's evidence at the time of the completion date. Reassessment of this Graded Unit should be based on a significantly different assessment task.

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. Assessors should ensure all candidates are aware of the issue of plagiarism and that candidate's provide references in the form of footnotes and/or bibliography for any content or materials used and/or accessed which is not their own. The centre's own policy on plagiarism should be available to candidates and reference can be made to relevant SQA Publications.

The assessment task set will be based on the development of a project for a real client or based on a case study scenario supplied by the centre. If the optional method by a centre is to offer a case study scenario to a number of candidates, then the centre must ensure the originality of the candidate submission and, if possible, make **each** candidate's submission unique.

At this level, although candidates are working collaboratively in a group, they should work independently, ie without undue assistance from the assessor. It is up to Centres to take reasonable steps to ensure that the project is the work of the candidate and that each candidate has contributed equally and fairly to the work of the group. 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 which requires the candidate, working in a team of 3–4 people, to produce an original piece of software. 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 issues raised and decide on a course of action for undertaking the project
- ◆ identify resources and interpret relevant information from a range of sources
- ◆ plan and organise work and carry it through to completion
- ◆ demonstrate the skills necessary to design applications in accordance with a recognised and appropriate methodology and produce an appropriate test strategy
- ◆ reflect on what has been done, analysing and comparing possible alternative solutions where appropriate and draw conclusions for the future. The critical analysis should cover two areas:
 - **product produced and process** – reflect on the product that has been produced, critically evaluating the approach and methods used in developing the project.
 - **individual reflective analysis** – a candidate should provide a comprehensive and thoughtful evaluation of their experiences drawing conclusions which could help future performance
- ◆ demonstrate the skills of working in a group to design, implement and test a computerised solution to a problem
- ◆ produce evidence of meeting the aims which this Graded Unit has been designed to cover (including the use of tools and techniques introduced in the related Units)

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

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.

Grade A	Grade C
<p>Is a seamless, coherent piece of work which:</p> <ul style="list-style-type: none"> ◆ has sufficient evidence for all three essential stages of the project, is produced to a high standard, and is clearly inter-related ◆ is complete and demonstrates the candidate’s high level of understanding from each stage, ie Planning, Developing and Evaluating ◆ demonstrates an intelligent and accurate interpretation of the project brief and user requirements ◆ is highly focused and relevant to the tasks associated with the project brief ◆ is clear and very well structured throughout and the language used is of a uniformly high standard in terms of level, accuracy and technical content ◆ effectively consolidates and integrates the required knowledge and skills ◆ uses information resources effectively throughout the entire process 	<p>Is a co-ordinated piece of work which:</p> <ul style="list-style-type: none"> ◆ has produced evidence for all three essential stages of the project and is produced to an adequate standard ◆ is complete and demonstrates the candidate’s acceptable level of understanding from each stage, ie Planning, Developing and Evaluating ◆ demonstrates an acceptable interpretation of the project brief and user requirements ◆ is focused and relevant to the tasks associated with the project brief ◆ is satisfactorily structured and language used is adequate in terms of level, accuracy and technical content ◆ consolidates and integrates knowledge and skills but this 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. The marks will then be aggregated to arrive at an overall mark for the project. Assessors will then 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%

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

The candidate must achieve a minimum of:

- ◆ 8 marks for the Planning Stage
- ◆ 24 marks for the Developing Stage
- ◆ 8 marks for the Evaluating Stage

The following marking scheme should be used to grade the 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 (20%)	<p>Additional Guide to Grading (Planning)</p> <p><i>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.</i></p> <p>Evidence, in the form of a report, analysing what is involved in the project –</p> <ul style="list-style-type: none"> ◆ Up to 5 marks for the initial investigation of the project, identifying the factors influencing the project which include functional and non-functional requirements. ◆ Up to 4 marks for producing evidence of developing an approach to deal with the project using recognised techniques. ◆ Up to 4 marks for a justification adopting the selected approach in terms of resources available (eg development and delivery platform, time available etc, etc.) and comparison with other possible approaches. ◆ Up to 5 marks for a project plan (based on the analysis undertaken) using project management software with realistic timescales and identifying the necessary tasks and project deliverables. ◆ Up to 2 marks for an investigation into possible alternative approaches. <p><i>The candidate must achieve all of the minimum evidence specified above in order to pass the Planning stage.</i></p>

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

Project Stage	Minimum Evidence Requirements
Stage 2 — Developing (60%)	<p>Additional guide to grading (Developing)</p> <p><i>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.</i></p> <p>Evidence of the candidate designing a solution to the project, testing the design, implementing the design, testing the design and managing the project.</p> <p>Analysis (15%)</p> <ul style="list-style-type: none"> ◆ Up to 6 marks for the analysis of the existing system, eg task scenarios, use cases. ◆ Up to 6 marks for analysis of the users of the system, eg user profiling. ◆ Up to 3 marks for the selection of, and justification for the use of appropriate development tools and interaction style. <p>Design (15%)</p> <ul style="list-style-type: none"> ◆ Up to 10 marks for the use of appropriate design techniques, eg screen design, navigational maps, storyboards, structure charts, pseudo code. ◆ Up to 5 marks for the creation of a test plan, test strategy and test data. <p>Implementation (30%)</p> <ul style="list-style-type: none"> ◆ Up to 20 marks for implementing the solution making effective use of the chosen medium. ◆ Up to 5 marks for testing the solution using the test plan, test strategy and test data developed during the design phase, rectifying any errors found rectifying any errors found as a result of testing and recording findings. ◆ Up to 5 marks for usability evaluation addressing the results of user feedback where appropriate and recording changes, eg user observation, heuristic inspection. <p><i>The candidate must achieve all of the minimum evidence specified above in order to pass the Developing stage.</i></p>

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

Project Stage	Minimum Evidence Requirements
Stage 3 — Evaluating (20%)	<p>Additional guide to grading (Evaluating)</p> <p><i>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.</i></p> <p>An evaluation of the effectiveness of the approach/strategy taken, which includes all stages of the activity.</p> <p>The evaluation should include: product produced and process together with individual reflective analysis.</p> <p>Up to 8 marks for:</p> <ul style="list-style-type: none"> ◆ analysis of the project ◆ planning, organising and updating of the project plan ◆ designing the solution ◆ implementing the solution ◆ testing the implementation ◆ documentation produced <p>Up to 12 marks for:</p> <ul style="list-style-type: none"> ◆ creation of an evaluation strategy and plan, identifying the criteria on which to base the evaluation ◆ identification and gathering of appropriate evidence ◆ evaluating the effectiveness of the problem solving activity (related to the original analysis of the project) ◆ referring to any modifications to the approach, design or implementation, that were made during the project ◆ concluding how the process of carrying out the project could be improved, with evidence to support the conclusions drawn effectively ◆ recommendations for the future, which are relevant to the problem, and justification of these recommendations <p>All of the evaluation should be in the form of a report.</p> <p><i>The candidate must achieve all of the minimum evidence specified above in order to pass the Evaluating stage.</i></p>

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

Guidance on the context and content for this Unit

The project should be designed to meet the expectations of the aims and objectives of the HNC Multimedia Computing: Web Development award which are:

- ◆ To development the candidate's knowledge and skills in planning, analysing, implementing, testing and evaluating.
- ◆ To develop study and research skills.
- ◆ To prepare candidates for employment in a Multimedia or Web-related post as a junior Multimedia developer or Web developer.
- ◆ To develop a range of contemporary vocational skills, ie technical and team working skills relating to the use and support of Multimedia and Web systems appropriate to employment at elementary development levels.

The assessor should meet the candidate at fixed milestones to discuss their progress through the stages. These milestones should be determined from discussions between the assessor and the candidate. This 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 opportunity 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 an important issue for assessors in education and the assessor must ensure the authenticity of the candidate evidence. A candidate should be formally issued with the centre's policy statement on plagiarism. An example of such a statement could be:

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.

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 assessment arrangements. For information on these, please refer to the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on SQA's website: www.sqa.org.uk.