**Higher National Unit specification**

**General information for centres**

**Unit title:** Interactive Media: Authoring

**Unit code:**  F1VT 34

**Unit purpose:** This Unit focuses on the implementation, testing and evaluation of a software solution. The Unit will provide candidates with opportunities to develop knowledge and skills in the coding and/or authoring of an interactive media application, website, contributory media element or component. The Unit is designed to offer flexibility for use in a variety of situations. It is envisaged that the Unit may be delivered in conjunction with, or following, a relevant planning Unit such as the HN Unit F1VS 34 *Interactive Media: Planning* or DH35 34 *Computing: Planning*.

On completion of the Unit the candidate should be able to:

1    Create a prototype based on a requirements and design specification.
2    Implement a software solution.
3    Test the solution.
4    Deploy the solution.
5    Evaluate the solution.

**Credit points and level:** 2 HN Credits at SCQF level 7: (16 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.*

**Recommended prior knowledge and skills:** Access to this Unit will be at the discretion of the Centre. It is recommended that candidates have a working knowledge of personal computers. This may be evidenced by the possession of relevant National Units or comparable competence gained informally or by suitable work experience.

**Core Skills:** There are no opportunities to develop Core Skills in this Unit.

**Context for delivery:** If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

**Assessment:** Evidence is required that candidates have achieved all Outcomes. Candidates are encouraged to use the internet in any research, etc, however, the evidence produced must be the candidate's own words. Assessors should assure themselves of the authenticity of candidate's evidence.

# General information for centres (cont)

Practical, written and/or oral recorded evidence is required which demonstrates that the candidate has achieved the requirements of all of the Outcomes and to show that the candidate has appropriate knowledge and understanding of the content of this Unit.

The candidate will implement a software solution based on a given set of requirements and design specification. Evidence generated within the planning Unit would be suitable for this purpose, or can be supplied by the Centre.

Candidates will be required to create a screen-based prototype, reworking as necessary until acceptance is gained. This may require the candidate to engage in an iterative process. It may be appropriate for the assessor to role play. The prototype will consist of skeletal screens or mock-ups to convey relevant information such as: layout, colour scheme, typography and give an indication of interactions. The prototype does not need to be functional. On acceptance of the prototype, the candidate can begin implementing their solution in accord with the given requirements and design specification. The solution must be tested using a test plan containing test cases with data, comparing the actual results against expected results and debugging as appropriate. The tested solution must be deployed (eg published to an FTP server ready for viewing in a browser). The candidate must ensure that deployment has been successful and that the solution remains fully functional in its deployed state. Finally, the candidate must evaluate the solution against the requirements and design specification and analysis, reflecting on feedback and make recommendation for improvement.

All assessments within this Unit should be presented as open-book. Due to the nature of this open-book assessment presentation, assessors should assure themselves of the authenticity of candidate's submission.

The Assessment Exemplar Pack for this Unit provides sample assessment materials including assessor checklists, practical tasks and an instrument of assessment for the knowledge. Centres wishing to develop their own assessments should refer to the Assessment Exemplar Pack to ensure a comparable standard.

# Higher National Unit specification: statement of standards

**Unit title:** Interactive Media: Authoring

**Unit code:** F1VT 34

The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

# Outcome 1

Create a prototype based on a given requirements and design specification

## Knowledge and/or skills

♦ Prototyping
♦ Iterative design

## Evidence Requirements

A candidate is required to produce the evidence for the Knowledge and/or Skills by:

♦ creating skeletal screens or mock-ups of the proposed solution (eg layout, navigation, interactions and system feedback, colour and typography, sample content, positioning of media elements (actual media elements do not need to be included within the prototype)). The evidence produced should have a direct correlation to the given requirements and design specification.
♦ engaging in the iterative design process, revising the prototype as necessary to reach user acceptance.

Assessment will be open-book. Prototyping should be sufficient but not excessive. The Outcome should be completed individually. Assessors must assure themselves of the authenticity of each candidate's submission.

## Assessment Guidelines

The prototype can be developed using any appropriate tool or set of tools. The prototyping tool(s) may differ from the implementation tool(s).

# Outcome 2

Implement a software solution for the given specification

## Knowledge and/or skills

♦ Select and use appropriate tools and development environment
♦ Identify, acquire, manipulate and optimise appropriate media elements
♦ Implement a solution
♦ Comply with legislation

**Higher National Unit specification: statement of standards (cont)**

**Unit title:**   Interactive Media: Authoring

♦   Verify the solution against requirements and the original specification

**Evidence Requirements**

A candidate is required to produce the evidence for the Knowledge and/or Skills by:

♦   using appropriate development tool(s) and/or authoring environment
♦   creating and/or source, manipulate and optimise media elements as appropriate to the functional requirements, authoring environment and intended deployment medium
♦   adhering to relevant legislation in the use of media elements
♦   the implementation of a solution with due consideration to functional and non-functional requirements
♦   adhering to relevant legislation in the context of accessibility
♦   verifying that the solution satisfies specified requirements and design

Assessment will be open-book and should be completed individually. Assessors must assure themselves of the authenticity of each candidate's submission.

# Outcome 3

Test the solution

## Knowledge and/or skills

♦   Test the solution
♦   Maintain a log of errors and possible causes
♦   Debug the solution
♦   End-user testing

## Evidence Requirements

A candidate is required to produce the evidence for the Knowledge and/or Skills by:

♦   using a test plan containing test cases and test data or sets to facilitate thorough testing of the solution
♦   producing, for each test case, maintain a record of the actual result in comparison to the result expected
♦   maintaining a log of errors and comment on possible reasons
♦   debugging the solution and rework as necessary to ensure a working solution that meets the requirements set out in the specification (use available debugging tools as appropriate)
♦   performing end-user testing using appropriate techniques

Assessment will be open-book and must be completed individually. Assessors must assure themselves of this and of the authenticity of each candidate's submission.

**Higher National Unit specification: statement of standards (cont)**

**Unit title:** Interactive Media: Authoring

# Outcome 4

Deploy the solution

### Knowledge and/or skills

♦ Prepare the solution and associated media elements for deployment
♦ Deploy solution effectively

### Evidence Requirements

A candidate is required to produce the evidence for the Knowledge and/or Skills by:

♦ prepare the solution for deployment (eg compiled, packaged, inclusion of media, directory structures, appropriate naming conventions)
♦ publish the solution to an appropriate medium (eg online, DVD, mobile)
♦ ensure that deployment has been successful and that the solution remains fully functional (eg use of screen captures, post-deployment testing)

Assessment will be open-book and must be completed individually.

# Outcome 5

Evaluate the solution

### Knowledge and/or skills

♦ Evaluate the solution against requirements and design specification
♦ Gather, analyse and reflect on end-user feedback

### Evidence Requirements

A candidate is required to produce the evidence for the Knowledge and/or Skills by:

♦ using specific evaluative criteria
♦ gathering appropriate evaluative data (eg conformance, reflective, end-user)
♦ analysing and summarise the data to determine if the solution satisfies the Requirements Specification, Design Specification, and can be considered fit for purpose
♦ reflecting on the work that has been carried out and any changes made
♦ making recommendations for improvement

Assessment will be open-book and should be completed individually. Assessors must assure themselves of this and of the authenticity of each candidate's submission.

## Administrative Information

**Unit code:**                     F1VT 34

**Unit title:**                    Interactive Media: Authoring

**Superclass category:**           CE

**Original date of publication:**  August 2007

**Version:**                       01

**History of Changes:**

| Version | Description of change | Date |
|---|---|---|
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**Source:**                SQA

# Higher National Unit specification: support notes

## Unit title:   Interactive Media: Authoring

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 80 hours.

## Guidance on the content and context for this Unit

This Unit is intended to provide candidates with an opportunity to develop a software solution to a given problem, or aspect of a larger problem. Outcomes are structured but generic, providing flexibility and scope for broad range of potential of interactive development opportunities.

It is recommended that the Unit be delivered in conjunction with, or following, a relevant planning Unit (eg F1VS 34: *Interactive Media: Planning*).

If delivered stand-alone, it would be advantageous if the candidate were to be given a set of requirements (eg problem, basic analysis, functional and non-requirements) and design specification (eg storyboards, style guide).

The Unit requires candidates to develop a software solution to a given problem. Examples of potential development opportunities include:

♦    an interactive multimedia application (eg quiz, widget, gadget)
♦    web site (eg static, dynamic, ecommerce)
♦    mobile phone or PDA application or utility
♦    a computer game, or part of (eg a game level)
♦    media element (eg 3D model, animation, icons, digital audio or video element)

The solution should be developed, tested and evaluated using appropriate tools and/or techniques. These will vary depending on the nature of the problem and solution.

On completion of the Unit, the candidate should have developed a software solution for the given problem. The solution need not be fully functional, but should be sufficient to meet the Knowledge and/or Skills required to successfully achieve the Unit. The solution should be tested using a test plan and evaluated using specific criteria.

Opportunities may exist to base the development activity on a specific aspect of a larger project. This may provide an opportunity to collaborate with other candidates from different vocational and specialist backgrounds (eg sound production, graphic design, animation, video production and web development) to produce a common end product. Each candidate would be required to generate their own evidence for all elements within each Outcome.

## Guidance on the delivery and assessment of this Unit

An Assessment Exemplar Pack has been developed for this Unit, containing sample assessment materials including assessor checklists, practical tasks and an instrument of assessment. Centres wishing to develop their own assessments should refer to the Assessment Exemplar Pack to ensure a comparable standard. The assessment tasks and evidence should be appropriate to SCQF 7.

# Higher National Unit specification: support notes (cont)

## Unit title:   Interactive Media: Authoring

### Outcome 1

The Candidate should create a prototype based on a given requirements and design specification.

The prototype should give an insight to the proposed solution. It does not need to be functional but should provide sufficient information to inform decisions. The prototype is likely to be screen-based (eg developed using a prototyping, graphic, illustration, animation, presentation or CAD application, software development or authoring environment).

It would be beneficial if candidates were to be made aware of the concept of prototyping and methods of prototyping. This may aid candidates in selecting, adapting or developing a prototyping approach appropriate to their project and/or scenario. It is likely that the candidate will consider approaches such as rapid, throw-away and evolutionary.

In the context of developing a prototype for an interactive media application, web site, animation or computer game (or a game level), the prototype could take the form of skeletal screens. In this context the prototype should provide a useful insight to layout, navigation, colour, typography, positioning or proposed use of media elements. It may be presented as a mock-up that resembles the solution but lacks the required functionality. The candidate may engage in iterative design, revising the prototype as necessary to reach acceptance. Several prototypes may be developed and discarded before acceptance. It is recommended that the assessor role-play, informing the candidate when criterion for acceptance has been satisfied.

Evolutionary prototyping could be considered as an alternative approach to the same type of development. The intended tool for implementation could be used, entering an iterative process of refinement to evolve from prototype to solution.

If development focuses on creating a media element in isolation, the candidate should adapt their approach to prototyping to 'best fit' their particular development situation. The approaches of throw-away or evolutionary prototyping may also work well for a graphics, video and/or animation project.

### Outcome 2

The candidate will implement a solution to an agreed specification using appropriate software development tools. For example, in the development of a web application, the candidate may use an Integrated Development Environment (IDE) or authoring environment, programming/scripting environment, plain text editor or any other tool suited to the development.

The candidate will also be required to identify, acquire, manipulate and optimise media elements appropriate to the development:

♦   identify — the candidate will be required to identify media elements required for the development. This could be presented as a list of elements required and their proposed use.
♦   acquire — the candidate may need to capture, create and/or source elements such as text, images, sound, video, animation and code. The candidate is not required to evidence all three methods of acquisition. The media elements acquired and method(s) of acquisition should be appropriate to the development. Issues of copyright and Intellectual Property Rights (IPR) should be borne in mind.

**Unit title:** Interactive Media: Authoring

♦ manipulate — the candidate may be required to modify elements such as text, images, sound, animation, video or code. For example, images may need to be resized, filters applied, cropped, etc. Audio elements may require the application DSP effects, trimming, normalisation, etc.
♦ optimise — the candidate may need to optimise media elements to ensure their suitability for inclusion in the solution. For example, images, audio and video may need to be compressed or converted to another format in preparation for deployment of the solution.

The candidate should adhere to relevant legislation (eg copyright, IPR, accessibility).

The candidate should take steps to verify that the solution satisfies the specified requirements and design.

**Outcome 3**

The candidate will be required to test the solution using test cases and sets (eg data), thoroughly testing the solution. The candidate should include normal and abnormal sets or data. A record should be maintained of the actual result compared with the result expected. Errors should be recorded and commented as to possible reason(s) and reworked to satisfactory conclusion.

The candidate should debug the solution, reworking as necessary to satisfy the requirements set out within the specification. The candidates should be encouraged to make use of available debug tools as appropriate.

The candidate should use one or more appropriate techniques to carry out and evidence end-user testing (eg observation, questionnaire, survey, logs, informal questioning, peer review).

**Outcome 4**

The candidate will be required to prepare the solution and associated media elements for deployment (eg complied, packaged, directory structures, naming conventions).

The candidate will be required to publish the solution to an appropriate medium (eg online, DVD, mobile).

The candidate should ensure that deployment has been successful and that the solution remains functional (eg retest the solution when published). Evidence could be presented in the form of screen captures.

**Guidance on the delivery and assessment of this Unit (cont)**

**Outcome 5**

The candidate will be required to use specific criteria to evaluate the solution against the requirements and design specification:

♦ Gather appropriate evaluative data (eg conformance, reflective, end-user)
♦ Analyse and summarise the data to determine if the solution satisfies the Requirements Specification, Design Specification, and can be considered fit for purpose

# Higher National Unit specification: support notes (cont)

## Unit title: Interactive Media: Authoring

♦ Reflect on the work that has been carried out and any changes made
♦ Make recommendations for improvement

***Opportunities for developing Core Skills***

There are no opportunities to develop Core Skills within this Unit.

## Open learning

If this Unit is delivered by open and distant learning methods, additional planning and resources may be required for candidate support, assessment and quality assurance.

A combination of new and traditional authentication tools may have to be devised for assessment and re-assessment purposes. For further information and advice, please see *Assessment and Quality Assurance for Open and Distance Learning* (SQA, February 2001 Publication Code A1030).

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

# General information for candidates

## Unit title:   Interactive Media: Authoring

This Unit aims to develop Knowledge and Skills in prototyping, developing, testing and evaluating a software solution based on given requirements and design specification.

It is likely that this Unit will be delivered in conjunction with, or following, the HN Unit F1VS 34 *Interactive Media: Planning*.

The Unit is intended to provide a high level of flexibility, facilitating a broad range of potential of interactive development opportunities. Outcomes are structured but generic. The range of development opportunities include, but are not limited to an interactive multimedia application (equiz, widget, gadget), web site (eg static, dynamic, ecommerce), mobile or PDA application or utility, computer game (or game level), digital media element (eg 2D or 3D animation), etc.

Opportunities may exist to base the development activity on a specific aspect of a larger project. This may provide an opportunity to collaborate with other candidates from different vocational and specialist backgrounds (eg sound production, graphic design, animation, video production and web development) to produce a common end product. Each candidate would be required to generate their own evidence with full coverage of each Outcome.

The Unit consists of the following Outcomes:

1    Create a prototype based on a given requirements and design specification
2    Implement a software solution
3    Test the solution
4    Deploy the solution
5    Evaluate the solution