



## Higher National Unit specification: general information

**Unit title:** Designing and Developing an Interactive Media Product

**Unit code:** H2X8 35

**Superclass:** CB

**Publication date:** November 2012

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**Version:** 01

### Unit purpose

This Unit is designed to further develop the knowledge and skills Candidates require to produce interactive media products, in particular using the chosen development language. This Unit builds on some of the mandatory Units of the HNC Interactive Media. Candidates will be expected to adhere to a development method to create a functional, interactive media product. This Unit will help Candidates to develop more advanced skills in the chosen development language. The work produced should clearly differentiate from the work produced at HNC level, with greater evidence of professional standards being applied. On completion of the product Candidates will evaluate and review the project, the final product and their personal development.

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

- 1 Plan and design an Interactive Media product.
- 2 Implement and deliver an Interactive Media product.
- 3 Test the product.
- 4 Evaluate the product.

### Recommended prior knowledge and skills

Access to this Unit is at the discretion of the centre however, it is recommended that the candidate should have completed or be in the process of completing the following Units or have proof of a similar level of experience:

F1VT 34: *Interactive Media — Authoring*  
F1VS 34: *Interactive Media — Planning*  
F1VV 34: *User Interface Design*  
F1YX 34: *Digital Imaging — Bitmap and Vector*  
F21G 34: *Interactive Media — Graded Unit 1*  
F1W0 34: *Project Management for IT*

## General information (cont)

### Recommended prior knowledge and skills (cont)

F6BV 35: *Human Computer Interface*  
F6JC 35: *Sound and Vision for Interactivity*  
F6BW 35: *Interactive Media Composition*

### Credit points and level

2 Higher National Unit 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.*

### Core Skills

The achievement of this Unit gives automatic certification of the Core Skill of *Problem Solving* at SCQF level 6.

### 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. The assessment for this Unit is used to prepare candidates for Interactive Media: Graded Unit 2.

### Assessment

Practical, written and/or oral recorded evidence is required which demonstrates that the candidate has achieved the Evidence Requirements of all of the Outcomes and to show that the candidate has appropriate knowledge and understanding of the content of this Unit. Candidates are encouraged to use the Internet, etc in any research; however, the evidence produced must be in the candidate's own words.

All Outcomes for this Unit will be assessed in one holistic assessment. The candidate will create an interactive media product based on a given brief. The topic can be decided by the Centre or the candidate. This assessment can be carried out on an individual or team basis. Where a team approach is used, it is expected that the amount of Candidate evidence produced is equivalent to the amount of evidence produced per Candidate for an individual project. It may be appropriate for the assessor to role play in this assessment, eg as the client or project manager.

Candidates will be given a project brief to which they must design, implement, test and evaluate a solution in the form of an interactive media product.

Candidates will be required to create a small, working interactive media product, by adhering to the plan and development method that they have chosen. As part of the design process they should produce a prototype before implementing the final solution.

## General information (cont)

Testing and evaluation strategies and plans should be produced before implementation starts. The test plan should at the very least include test cases with data, compare the actual results against expected results and debugging as appropriate. The end product must be published and tested on the chosen medium. The candidate must ensure that the published version performs as planned and is functional. Finally, the candidate must evaluate the solution to the project against the project requirements and design specification, end user feedback, making recommendations for improvement and evaluate how effectively they carried out the project.

The type of Interactive Media product chosen should easily allow for each team member to evidence their quality of knowledge and skills for all the Evidence Requirements and ultimately produce a relevant and meaningful product. The emphasis of the evidence is based on the quality of work more so than the quantity produced.

All assessments within this Unit should be presented as open-book, under supervised and unsupervised conditions. The Testing element of the Unit must be carried out under supervised conditions. Due to the nature of this open-book assessment, assessors must ensure the authenticity of candidates work especially where evidence has been produced unsupervised.

## Higher National Unit specification: statement of standards

**Unit title:** Designing and Developing an Interactive Media Product

**Unit code:** H2X8 35

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

Please refer to Knowledge and/or Skills for the Unit and Evidence Requirements for the Unit after the Outcomes.

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

Plan and design an Interactive Media product.

#### Knowledge and/or Skills

- ◆ Produce a project plan.
- ◆ Select an appropriate development method.
- ◆ Design specifications.
- ◆ Produce and evaluate a prototype.
- ◆ Select appropriate methods for testing and evaluation.
- ◆ Devise plans and strategies for testing and evaluation.

### Outcome 2

Implement and deliver an Interactive Media product.

#### Knowledge and/or Skills

- ◆ Select and use appropriate development tools and language(s).
- ◆ Identify, acquire, manipulate and optimise appropriate media elements.
- ◆ Develop an Interactive Media Product.
- ◆ Develop scripting/coding skills for interactive features.
- ◆ Apply current legislation and standards.
- ◆ Prepare the solution and associated media elements for delivery.
- ◆ Deliver an Interactive Media Product effectively.

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

**Unit title:** Designing and Developing an Interactive Media Product

### Outcome 3

Test the product.

#### Knowledge and/or Skills

- ◆ Conduct tests.
- ◆ Record test data.
- ◆ Debug the product.
- ◆ Conduct end-user testing.
- ◆ Produce an error report.

### Outcome 4

Evaluate the product.

#### Knowledge and/or Skills

- ◆ Evaluate an Interactive Product.
- ◆ Carry out end-user evaluation.
- ◆ Analyse end-user feedback.
- ◆ Evaluate the effectiveness of the project.

### Evidence Requirements for the Unit

Practical, written and/or oral recorded evidence is required which demonstrates that the candidate has achieved the Evidence Requirements of all of the Outcomes and to show that the candidate has appropriate knowledge and understanding of the content of this Unit. Candidates are encouraged to use the Internet, etc in any research; however, the evidence produced must be in the candidate's own words. Assessors must ensure the authenticity of candidates work especially where evidence has been produced unsupervised.

All Outcomes for this Unit will be assessed in one holistic assessment. The candidate will create an interactive media product based on a given brief. The topic can be decided by the Centre or the candidate. This assessment can be carried out on an individual or team basis. Where a team approach is used, it is expected that the amount of candidate evidence produced is equivalent to the amount of evidence produced per candidate for an individual project. Candidates would have to evidence that they have actively participated in group decisions. The topic can be decided by the Centre or the candidate, but it should be of sufficient depth and technical complexity to make it suitable as a SCQF level 8 project. It may be appropriate for the assessor to role play in this assessment as, eg the client or project manager.

The type of Interactive Media product chosen should easily allow for each team member to evidence their quality of knowledge and skills for all the Evidence Requirements and ultimately produce a relevant and meaningful product.

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

**Unit title:** Designing and Developing an Interactive Media Product

If the Core Skill of *Problem Solving* at SCQF level 6 is embedded in this Unit, the task must allow for candidates to deal with an activity where the factors involved may be numerous, complex or unfamiliar, where relationships need to be clarified and where the task management itself is complex.

The emphasis of the evidence is based on the quality of work more so than the quantity produced.

### Outcome 1

Practical, written and/or oral recorded evidence must be provided. Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can to a given brief:

- ◆ Produce a project plan
- ◆ Select an appropriate development method eg lifecycle, to create the product
- ◆ Produce a design specification that is clear, concise and meets the requirements of the project
- ◆ Produce a prototype design based on the design spec
- ◆ Conduct an evaluation of the prototype design and make necessary changes based on feedback

### Outcome 2

Practical, written and/or oral recorded evidence must be provided. Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can for a given brief:

- ◆ Select and use appropriate development tool(s) and language(s) to create the interactive product.
- ◆ Identify, acquire and optimise appropriate media elements acknowledging copyright details. A minimum of two types of media element must be used.
- ◆ Develop a suitable interactive solution comprising of a minimum of five interfaces. During development of the interactive media product you must demonstrate all of the following:
  - hand coding of original scripts
  - adaptation of scripts/code generated from libraries or in-built features of the development tool
  - appropriate use of variables and/or arrays
  - correct implementation of control structures
  - correct use of arithmetic and/or logical operators
  - appropriate use of pre-defined and/or user-defined functions
  - clear and unambiguous error handling and user feedback
  - suitable file naming conventions and folder structure
  - internal comments for code/scripts
  - adherence to current regulations in accessibility

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

**Unit title:** Designing and Developing an Interactive Media Product

- ◆ Prepare and deploy the solution which includes:
  - successful functioning of the end product on the chosen medium
  - relevant end user guide, instructions or help information
  - verification that the end product meets the original requirements and design specification

### Outcome 3

Practical, written and/or oral recorded evidence must be provided. Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can to a given brief:

- ◆ Produce an appropriate testing strategy.
- ◆ Carry out and document rigorous testing of the Interactive Media Product.
- ◆ Debug as required.
- ◆ Carry out end user testing using appropriate techniques and collect feedback.
- ◆ Produce a short report summarising the results of the testing process which includes any errors that couldn't be rectified.

### Outcome 4

Practical, written and/or oral recorded evidence must be provided. Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ Evaluate the end-product. The evaluation must include:
  - recommendations for and improvements that could be made to the end-product
  - justification and reasons for the recommendations
- ◆ Carry out a self-evaluation. The self-evaluation must reflect on all aspects of the process of carrying out the project and include:
  - effectiveness of the chosen approach and tools/languages used
  - analysis of all aspects of problem solving during the project
  - analysis of time management during the project
  - conclusions and recommendations that could be made when carrying out similar projects in the future

## Higher National Unit specification: support notes

### Unit title: Designing and Developing an Interactive Media Product

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 one of a series of Units at Higher National level relating to Interactive Media. It is a mandatory Unit within the HND Interactive Media Group Award and can also be taught standalone.

This Unit is about further developing the knowledge and skills required by candidates to produce interactive applications. This builds on some of the mandatory Units for G8LT 15: *HNC Interactive Media*, F1VS 34: *Interactive Media — Planning* and F1VT 34: *Interactive Media — Authoring*, F1VV 34: *User Interface Design* and F1YX 34: *Digital Imaging — Bitmap and Vector*. Where this Unit is being delivered as part of a Group Award, candidates should draw on the knowledge and/or skills gained from other Units.

Where a team approach is used for the assessment, candidates could be encouraged to implement knowledge and skills gained from DH21 34: *Working Within a Project Team*. If this Unit is not being delivered as part of G8LT 15: *HNC Interactive Media*, the Core Skill of *Working with Others* at Higher could be used as a reference.

This Unit can be integrated with F6BV 35: *Human Computer Interface*, whereby the product can be analysed, designed and evaluated in that Unit. This approach will result in a more complete and realistic approach to creating the product.

The Unit has been written in a generic sense in order that Centres can ask candidates to create an interactive media product from the wide range of products available — eg web applications, DVDs, mobile applications, standalone applications.

Candidates will be expected to create and adhere to a plan and development lifecycle to produce a working product. The work produced should clearly differentiate from the work produced at SCQF level 7, in terms of quality as opposed to quantity. The emphasis should not be on the size of the product, more so the quality and level of complexity. Prototypes that use STUBS may therefore be adequate. At the end of the Unit candidates will have to evaluate and review their work.

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. 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)
- ◆ interactive TV application/product

## Higher National Unit specification: support notes (cont)

### **Unit title:** Designing and Developing an Interactive Media Product

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

One of the main aims of the Unit is to develop candidate's skills in scripting. At the time of writing acceptable languages are eg ActionScript, Lingo, JavaScript, VBScript, ASP, PHP. This list is not exhaustive. Where web documents are being produced candidates will be able to develop their skills in mark up language and styling conventions. At the time of writing XHTML (1, 2), CSS (1,2,3) and HTML 5 are suitable technologies. The choice of languages should reflect current standards.

It is acceptable to use features of a development tool such as Dreamweaver, Director, Flash, Encore, to create the product. However the codes/scripts stated in the Evidence Requirements for Outcome 2, must be hand produced by candidates, not generated by menu commands.

### **Outcome 1**

Candidates should be exposed to the various techniques used to develop the analysis stage into a working design specification.

Initially candidates should be exposed to planning techniques, tools and terms used in industry. It would be pertinent to use project management tools such as Microsoft Project or even Excel to produce Gantt charts. Emphasis should be based on how these are live documents, detailing estimated and actual time scales. Details such as milestones and deliverables should be taught and put into practice.

A variety of development methods should be covered, eg RAD, iterative, prototyping, waterfall models, in particular the types of projects they are suited for, advantages and disadvantages. This must enable candidates to make a justified decision for the method they decide to use in the assessment.

Various design techniques such as navigation maps, storyboards, mood boards, wire frames, UHL should be discussed. These should be suitable for the product and development language. Candidates should be made aware of the importance of information architecture and the various methods and styles of navigation and interactivity. It may also be useful to examine the impact of aesthetics and layout.

From this candidates should be able to easily justify their choice of design. Examples of existing products should be evaluated to help candidates gain a good understanding of the importance of design and evaluation. This will also help to introduce them to evaluation techniques.

Emphasis should be placed on how important it is to produce design documentation that is easy for other people to follow and work from. It would be helpful to give some exercises for candidates to try and create designs from good and bad examples.

At this stage candidates should have the relevant practical skills to produce a simple prototype that gives an indication of how the final product should look and function. Candidates should be encouraged to evaluate their peers and their own work.

## Higher National Unit specification: support notes (cont)

### Unit title: Designing and Developing an Interactive Media Product

Examples of test plans, strategies and evaluation strategies should be given to help candidates gauge the type of information they generate and their relevance to the success of a product. Again it would be a useful exercise to use good and bad examples.

#### Outcome 2

Candidates should be given extensive practice in the use of the chosen development environment and language(s) and the publishing techniques that they will use in the assessment. Practical exercise should cover all of the Evidence Requirements in addition to any other recent developments that will be of use in industry.

The purpose of this Outcome is to help candidates develop their skills further so that they can create more advanced types of interactivity than that covered in F1VT 34: *Interactive Media — Authoring*.

To help understand errors in scripts/code it may be useful to give exercises whereby the candidate has to identify and solve the problem. Lectures should also focus on current standards.

The importance of applying clear comments should be demonstrated and practiced.

#### Outcome 3

In this Outcome candidates should examine what kind of tests there are and how these are carried out in professional projects — eg lab situations, sourcing testers, recorded scenarios and the team members who carry this out. It would be pertinent to simulate some of these situations in the classroom to help gain a better understanding.

Examples of completed test documents and reports could be used to generate discussion about the importance of this element of project documentation. From this candidates could be given exercises which will help them to produce their own test documentation.

Emphasis should be made on the difference between testing and evaluation.

#### Outcome 4

Similar teaching methods and approaches could be used in this Outcome as in Outcome 4.

With regard to self evaluation it would be useful for candidates to maintain a personal diary/log/blog of their progress throughout the Unit. Areas such as favourite elements as well as challenges and how to document these effectively so that the candidate can learn from them, would be relevant. What should be emphasised, is the importance of this exercise. It would be useful to give examples of how professional practitioners have benefited from this.

Dedicated time should be given to the testing and evaluation stages to help candidates better understand the importance of these stages and how much time is spent in professional projects.

It may be useful to practice peer evaluation.

## Higher National Unit specification: support notes (cont)

**Unit title:** Designing and Developing an Interactive Media Product

### Guidance on the delivery of this Unit

It is recommended that a holistic approach be used to teach this Unit. Throughout the Unit, consideration should be given to enhancing the candidate experience.

If this Unit is being delivered as part of a Group Award, it is recommended that it is taught within the subject area of the Group Award to which it contributes. There may be opportunities to cross assess elements of this Unit with other Units in HND Interactive Media, in particular:

F1VT 34: *Interactive Media — Authoring*  
F1VS 34: *Interactive Media — Planning*  
F1VV 34: *User Interface Design*  
F1YX 34: *Digital Imaging — Bitmap and Vector*  
F21G 34: *Interactive Media — Graded Unit 1*  
F1W0 34: *Project Management for IT*  
F6BV 35: *Human Computer Interface*  
F6JC 35: *Sound and Vision for Interactivity*  
F6BW 35: *Interactive Media Composition*

This Unit should be taught early on in the session as it will help candidates to prepare for the Graded Unit Project at the end of the session.

This Unit takes candidates through the development process to create an interactive media product. To help candidates understand some of the concepts, it may be effective to use a reverse engineering approach in lectures and exercises. Examples of a diverse range of interactive media products should be examined and discussed.

Candidates should be exposed to the chosen development environment and language(s) from early on the Unit. This should be through tutor led demonstrations and individual practical exercises. Knowledge based subjects would benefit from class based lectures with supported individual and team tasks. Real life contexts may help to develop candidates understanding of the subject area. Candidates should be given the opportunity to complete these tasks and exercises before commencing the relevant part of the assessment.

It may be useful to construct lessons as a combination of theory and practical sessions.

It is likely that more delivery time will be spent teaching Outcomes 1 and 2 due to the scope of these Outcomes. Less time may be required for Outcomes 3 and 4 as some of the knowledge and skills are introduced in Outcome 2.

The assessment can be produced either on an individual basis or as part of a team. It is recommended that the team consist of 3–4 members. Assessments tasks could be given/submitted in stages or in its entirety. The approach chosen must be suitable for the candidate and not disadvantage them.

## Higher National Unit specification: support notes (cont)

### Unit title: Designing and Developing an Interactive Media Product

To ensure the authenticity of individual candidates evidence assessors could state that certain elements have to be completed in class. Whilst testing must be carried out under supervised conditions to ensure that it is being carried out effectively, it may also be apt to carry out the evaluation in the same manner. For any evidence produced unsupervised, candidates could be asked to demonstrate or explain how they came to the conclusion. It may be pertinent to devise a set of questions and record responses in these circumstances.

### Guidance on the assessment of this Unit

It is recommended that the knowledge and skills are taught before candidates are presented with the project tasks. Centres may wish to do this with the various stages of the Outcomes. It may be beneficial to candidates if the scenario is issued early on in the Unit. It may be necessary for the Assessor to role play in this assessment, eg as a client or project manager.

The project may take the form of an online or offline product, eg DVD application, online quiz, an e-commerce type application, interactive TV application or a viable proposal from the candidate.

Opportunities exist to integrate this Unit with F6BV 35: *Human Computer Interface*, whereby the design and evaluation of the product could be carried out in that Unit.

The emphasis should not be on the size of the product, more so the quality and level of complexity. Prototypes that use STUBS may therefore be adequate.

Where a website is chosen it may be relevant to register this with a search engine and apply techniques to aid page indexing/search engine optimisation.

Where a team approach is used, it is recommended that it consists of 3–4 members. Team decisions could be made for certain stages in the project, eg analysis, aspects of the design, testing methods. Candidates could be encouraged to implement Knowledge and Skills gained from DH21 34: *Working Within a Project Team*. Team collaboration can be used to help solve any scripting/coding problems; however, candidates must only apply these if they understand the code. This could be evidenced in their comments.

The decision as to whether the Interactive Media Product lends itself to a team project, is at the discretion of the Centre. The type of Interactive Media product chosen should easily allow for each team member to evidence their quality of knowledge and skills for all the Evidence Requirements, and ultimately produce a relevant and meaningful product.

The emphasis of the evidence is based on the quality of work more so than the quantity produced.

Candidates should be encouraged to work towards producing a professional standard of work for documentation and the end product.

## Higher National Unit specification: support notes (cont)

**Unit title:** Designing and Developing an Interactive Media Product

To ensure the authenticity of individual candidates evidence assessors could state that certain elements have to be completed in class. Whilst testing must be carried out under supervised conditions to ensure that it is being carried out effectively, it may also be apt to carry out the evaluation in the same manner. For any evidence produced unsupervised, candidates could be asked to demonstrate or explain how they came to the conclusion. It may be pertinent to devise a set of questions and record responses in these circumstances.

### Online and Distance Learning

If this Unit is delivered by open or distance 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.

### Opportunities for developing Core Skills

The achievement of this Unit gives automatic certification of the Core Skill of *Problem Solving* at SCQF level 6.

### 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](http://www.sqa.org.uk/assessmentarrangements)

## History of changes to Unit

Version	Description of change	Date

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## General information for candidates

### **Unit title:** Designing and Developing an Interactive Media Product

This Unit is designed to further develop the knowledge and skills you require to produce interactive media products, particularly in a chosen development language. This Unit builds on some of the mandatory units of the HNC Interactive Media. You will be expected to adhere to a development method to create a functional, interactive media product. This Unit will help you to develop more advanced skills in the chosen development language. The work produced should clearly differentiate from the work produced at HNC level, with greater evidence of professional standards being applied. On completion of the product you will evaluate and review the project, the final product and your personal development.

On completion of the Unit you should be able to:

- 1 Plan and Design an Interactive Media product
- 2 Implement and deliver an Interactive Media product
- 3 Test the product
- 4 Evaluate the product

You will be assessed on your depth of knowledge and your practical skills. There is one assessment for this Unit, which covers all the Outcomes. This can be carried out individually or as a team. In either case, you will have to generate the same amount of evidence.

You will be exposed to industry standard software that you are already familiar with, to develop more advanced skills in scripting/coding. In addition, you will have opportunities to incorporate some of the knowledge and skills that you already have and are covering in other Units.