



## Higher National Unit specification

### General information for centres

**Unit title:** Digital Imaging: Vector Techniques

**Unit code:** F208 34

**Unit purpose:** This Unit is designed to allow the candidate to explore digital imaging and vector creation techniques for computer applications. It will enable the candidate to further explore vector graphics and gain advanced technical knowledge of vector drawing software. In addition, the Unit requires candidates to create design solutions with these skills which allow the candidate to develop their creative thinking. This Unit would be suitable for candidates wishing to develop advanced competence in vector graphics as it will develop an awareness of the importance of vector graphics and their appropriateness for inclusion within design work. Organisational skills are included in the preparation of materials for the incorporation into a larger project.

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

- 1 Demonstrate an understanding of vector graphics.
- 2 Produce a design/s based on a project brief.
- 3 Use advanced features of a vector graphics package.

**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.*

**Recommended prior knowledge and skills:** Access to this Unit is at the discretion of the centre, however, candidates should have been introduced to the basic functions of a computer and design software applications.

**Core Skills:** This Unit requires that candidates analyse a given brief and provide solutions to the brief. There may be opportunities to gather evidence for the Problem Solving Core Skill at an appropriate level.

**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.

This Unit is an optional Unit within the HNC Interactive Media and the PDA (Professional Development Award) Certificate in Digital Imaging at SCQF level 7 (subject to validation).

## General information for centres (cont)

**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.

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

This Unit should be assessed by the assessment tasks detailed as follows:

- 1 Outcome 1 is a closed-book assessment and should take the form of a set of questions where the candidate is required to produce evidence of their knowledge of the fundamentals of digital graphics.
- 2 Outcome 2 is an open-book assessment and should take the form of a practical assessment carried out under supervised conditions and is designed to demonstrate the candidate's knowledge and/or skills in producing designs to a given brief.
- 3 Outcome 3 is open-book assessment and should take the form of a practical assessment carried out under supervised conditions designed to demonstrate a candidate's knowledge and/or skills in creating, manipulating and optimising vector graphics. There must be a checklist submitted which records that a candidate has achieved all necessary items from the Evidence Requirements and this checklist must be endorsed by the assessor with their name, signature and date.

Assessments for Outcomes 2 and 3 can be integrated into one holistic assessment. The practical assessments within this Unit should be based on the same case study.

Assessors should ensure themselves of the authenticity of the Candidate's evidence.

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:** Digital Imaging: Vector Techniques

**Unit code:** F208 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

Demonstrate an understanding of vector graphics

#### Knowledge and/or Skills

- ◆ Use of vector graphics
- ◆ Compression
- ◆ Output variations
- ◆ Hardware
- ◆ Copyright

#### Evidence Requirements

Evidence of all the Knowledge and/or Skills in this Outcome will be assessed using a representative sample of questions covering the bullet points below:

- ◆ identify the use of vector graphics within different interactive applications
- ◆ identify and describe compressed and uncompressed file formats for vector graphics, eg what format(s) should be used for particular delivery media, their attributes, advantages and disadvantages
- ◆ describe compression eg what compression is, the need for compressing graphics, lossy, lossless, what compression is trying to achieve and artefacts caused by compressing graphics
- ◆ define the difference between outputting graphics for screen and print
- ◆ identify and describe hardware devices used in the development of vector graphics, eg different types of display technologies, scanners, cameras, graphics tablets, styluses, light pens, mouse
- ◆ identify and describe current copyright issues associated with graphics

The assessment will be supervised, controlled and presented under closed-book conditions and should last no more than 1 hour. The instrument of assessment must provide opportunities for the Outcome to be fulfilled by means of sampling across the range of content for Outcome 1. This assessment must change on each assessment occasion. Achievement can be decided by use of a 60% cut-off score.

Where re-assessment is required it should contain a different sample from the range of mandatory content.

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

**Unit title:** Digital Imaging: Vector Techniques

### Outcome 2

Produce a design/s based on a project brief

#### Knowledge and/or Skills

- ◆ Analysis of brief
- ◆ Explore creative concepts and possible solutions
- ◆ Clearly present ideas

#### Evidence Requirements

Produce, in the most appropriate format, potential solutions to a given project brief. The candidate must produce a suitable design from their analysis. This should be evidenced by:

- ◆ analysis of the requirements of the project
- ◆ results of research eg printouts of webpages
- ◆ clearly presented ideas eg storyboards, mood boards, sketchbook, workbook, mockups or 3D equivalent where ideas and concepts are fully explored

#### Assessment Guidelines

See Outcome 3

### Outcome 3

Use advanced features of a vector graphics package

#### Knowledge and/or Skills

- ◆ Acquire vector graphics
- ◆ Create vector graphics using appropriate software
- ◆ Manipulate vector graphics using appropriate software
- ◆ Edit vector graphics using appropriate software
- ◆ Implement vector graphics into an application

#### Evidence Requirements

Candidates will be required to provide evidence to demonstrate their Knowledge and/or Skills by showing they can in relation to a given project brief(s):

- ◆ use appropriate vector graphics software
- ◆ produce four design solutions
- ◆ create vector graphics which include compound shapes and complex paths
- ◆ apply the correct attributes for the chosen medium — resolution, image size, colour mode
- ◆ create text and apply text manipulation including text to path manipulation
- ◆ apply perspective
- ◆ apply blend to path manipulation

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

### Unit title: Digital Imaging: Vector Techniques

- ◆ apply effects, stroke colour fill colour, gradients
- ◆ apply different ink modes
- ◆ apply special characters
- ◆ transform and modify shapes
- ◆ convert a bitmap to a vector
- ◆ effectively organise layers within each image incorporating an appropriate naming convention
- ◆ optimise graphics as appropriate for intended method of delivery: correct file formats, compression, resolution, colour mode and appropriate file size
- ◆ apply copyright protection to at least one graphic
- ◆ save vector graphics in relevant formats
- ◆ save graphics in a format suitable for future editing
- ◆ use suitable naming conventions and filing structure
- ◆ submit all graphics on disk or upload them to a specified location. This must include originals and edited versions. Edited files must be stored in a different folder
- ◆ integrate the images into the specified application(s), eg a webpage or screen
- ◆ provide prints of the graphics. The correct print settings should be applied
- ◆ apply colour management to prints

Throughout the development all work must be organised and contained in a production folder.

### Assessment Guidelines

It is recommended that Outcomes 2 and 3 are integrated into one holistic assessment, however, these may be assessed individually if barriers are being placed on the learning process through this holistic approach.

It is recommended that this assessment is based around a theme. Candidates could be given a range of themes to choose from or select their own them from a source agreed by the assessor. Where candidates select their own theme this must be approved by the assessor.

## Administrative Information

**Unit code:** F208 34

**Unit title:** Digital Imaging: Vector Techniques

**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

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## Higher National Unit specification: support notes

### Unit title: Digital Imaging: Vector Techniques

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 40 hours.

This could be allocated as follows:

- ◆ Outcome 1 10 hours
- ◆ Outcome 2 10 hours
- ◆ Outcome 3 20 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 and it can also be taught as a standalone Unit. This Unit builds on the knowledge and skills of F1YX 34 *Digital Imaging: Bitmap and Vector*. Where candidates have not achieved this Unit, it is recommended that they have prior knowledge and skills in the creation of graphics.

The purpose of this Unit is to enable candidates to acquire software skills to effectively undertake creative aspects of interactive media projects and to work with digital imaging software and hardware applications. The primary aim is to develop an understanding of graphics and the processes involved in creating them as opposed to teaching candidates to be designers.

It is suggested that candidates use software, editing tools, filters, etc, that relates to the design brief. At the time of writing, a number of applications were considered suitable for use in the delivery of this Unit and these include: Adobe Illustrator, Fireworks, Corel Draw, and Freehand or a suitable alternative.

### Guidance on the delivery and assessment of this Unit

This Unit is designed to enable the candidate to explore digital imaging, and to create digital pieces of work to gain technical knowledge of vector graphics software to a specific brief. Brief/s can either be set as individual projects or holistically as part of an overall project. Candidates are not expected to produce elaborate or sophisticated graphics as part of this Unit.

The emphasis for this Unit should be on candidate learning rather than on assessment. All topics should be covered in the learning activities.

This Unit may also be delivered in conjunction with the HN Unit F207 34 *Digital Imaging: Bitmap Techniques* with the brief/s being used holistically to assess the knowledge and skills for the Units.

The knowledge covered in Outcome 1 could be taught in tandem with the practical skills of Outcomes 2 and 3. This approach may help candidates to understand and digest concepts better. It is not compulsory to teach the knowledge and skills of this Unit in the order they have been presented in, although, it is recommended as the order has been applied in a natural sequence for learning this subject.

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

### **Unit title:** Digital Imaging: Vector Techniques

In Outcome 1, a candidate should undertake a closed-book assessment comprising of a set of questions.

In Outcome 2, emphasis should be placed on the process used for creating graphics and the individual's interpretation of the project. Ideas, once formalised, should be analysed and fully explored. Selection of a final project may be made in conjunction with the assessor. A considered use of media should be in evidence. The primary aim is to develop an understanding of graphics and the processes involved in creating them as opposed to teaching candidates to be designers.

In Outcome 3, the candidate should use advanced vector graphics software features to create digital imagery to a given brief(s).

#### ***Opportunities for developing Core Skills***

This Unit requires that candidates analyse a given brief and provide solutions to the brief. There may be opportunities to gather evidence for the Problem Solving Core Skill at an appropriate level.

### **Open learning**

This Unit is suited to open learning as evidence will be delivered digitally. Authenticity and sufficiency of candidate's evidence should be ensured and oral or online multiple questioning is appropriate.

For information on normal open learning arrangements, please refer to the SQA guide *Assessment and Quality Assurance for Open and Distance Learning (A1030)* which available on SQA's website ([www.sqa.org.uk](http://www.sqa.org.uk)).

### **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. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* ([www.sqa.org.uk](http://www.sqa.org.uk)).



## General information for candidates

### Unit title: Digital Imaging: Vector Techniques

This Unit is designed to allow you to develop skills relating to management of digital and computer technology within the design process in the creation of vector graphics project. It will enable you to explore vector graphics and to create digital pieces of work to gain technical knowledge of vector drawing software to a specific brief. Brief(s) can either be set as individual projects or holistically as part of an overall project. Candidates are not expected to produce elaborate or sophisticated graphics as part of this Unit.

This Unit is split into three areas and concentrates on the following:

- 1 Demonstrate an understand of vector graphics.
- 2 Produce a design/s based on a project brief.
- 3 Use advanced features of a vector graphics package.

Throughout this Unit you will gain practical skills in a vector creation software application.

Outcome 1 relates to the theoretical elements of vector graphics — file types, compression, hardware, software, graphics for web and print, print output settings and copyright issues. Assessment for this Outcome is by means of a series of questions.

In Outcome 2, the emphasis is placed on the process used for creating graphics and the individual's interpretation of a design brief. The primary aim is to develop an understanding of graphics and the processes involved in creating them as opposed to teaching someone to be a designer. Assessment for this Outcome requires candidates to generate work from a given project briefs.

In Outcome 3, you will use advanced bitmapped software features to create vector graphics. You will produce vector graphic versions of design solutions for given project brief/s. Assessment for this Outcome is practical whereby you have to create two composite bitmapped graphics.

An assessor may ask you to explain parts of your work to authenticate the evidence.

In order to complete this Unit successfully you will be required to demonstrate you have achieved success in all three Outcomes.