

## Higher National Unit Specification

### General information for centres

**Unit title:** Advanced Bitmap Graphics for Creative Multimedia Design

**Unit code:** DE2P 35

**Unit purpose:** This Unit is designed to provide candidates with the knowledge and/or skills necessary to produce creative solutions using the full extent of bitmap graphic software packages. The main activities in the Unit are aimed at creating design solutions with the skills providing the tools for the candidate to fully express their creative thinking. Other activities highlight organisational skills and the preparation of materials for incorporation into a larger project.

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

1. Create composite images using bitmap graphic software.
2. Use advanced features of bitmap graphic software.
3. Analyse the optimisation of bitmap graphics.

**Credit value:** 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.*

**Recommended prior knowledge and skills:** Access to this unit is at the discretion of the centre. However, it would be beneficial if candidates were proficient in computer use and saving files in a methodical way. Candidates should have a basic understanding of the manipulation of vector graphics and the planning process for producing design solutions within the constraints of a design brief. This may be evidenced by the possession of relevant National Units, HN units or experience. Higher Art and Design and/or Craft Design and Technology would provide useful background knowledge but are not essential to success in this Unit. It is recommended that candidates have completed HN Unit, DE2W 34 Graphics for Creative Multimedia Design, or similar, prior to commencement of this Unit.

**Core skills:** There may be opportunities to gather evidence towards core skills in this Unit, although there is no automatic certification of core skills or core skill components.

## Higher National Unit Specification

### General information for centres (cont)

**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 most appropriate approach to delivery is one that requires the candidate to integrate all knowledge and/or skills for the unit to create bitmap graphic design solutions to a given brief. The lecturer could act as the client for the finished design or opportunities could be taken to work with external clients. In both cases the candidate should respond to feedback accordingly. The unit should be delivered as part of a cohesive course, although it can be delivered as a stand alone Unit.

**Assessment:** The assessment for this unit will be product based in the form of:

- Complete design solutions containing elements of Outcomes 1, 2 and 3
- Written evidence of optimisation analysis

## **Higher National Unit specification: statement of standards**

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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 Composite Images using Bitmap Graphics Software.

#### **Knowledge and/or skills**

- Planning
- Scaling
- Opacity
- Layers
- Layout
- Guides
- Text
- Copyright Issues

#### **Evidence requirements**

Candidates will need evidence to demonstrate their knowledge and/or skills by showing that they can:

- Plan the layout of at least 3 composite images with the use of roughs and sketches
- Use guides and layout techniques
- Create 3 composite images each containing at least 5 elements
- Adhere to the relevant copyright legislation

#### **Assessment guidelines**

Although there is a wealth of copyright free images to be found candidates would benefit if they could produce every element of each image by the use of digital cameras or software. Candidates should be encouraged to contribute to discussions with the lecturer and their peers concerning the development of creative ideas for themselves and others in the class. In producing the composite bitmap images, candidates should be assessed on the application of all knowledge and/or skills over the entire Outcome. Each element of the Outcome need not include all knowledge and/or skills within itself.

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

**Unit title:** Advanced Bitmap Graphics for Creative Multimedia Design

At least five different advanced editing elements should be used across the entire outcome. The implementation and number of advanced editing elements used beyond this for each design should be driven by the parameters of the given brief.

### **Outcome 2**

Use advanced features of bitmap graphics software.

#### **Knowledge and/or skills**

- Layers
- Layer effects
- Special effect filters
- Masks
- Alpha Channels

#### **Evidence requirements**

Candidates will need evidence to demonstrate their knowledge and/or skills by showing that they can:

- Manipulate 3 composite images incorporating at least 5 advanced features of bitmap graphic software
- Effectively organise layers within each image incorporating an appropriate naming convention
- Control effect parameters within each image

#### **Assessment guidelines**

Each composite image of the outcome need not include all knowledge and/or skills within itself. At least five different advanced editing elements should be used across the entire outcome. The implementation and number of advanced editing elements used beyond this for each design should be driven by the parameters of the given brief. The editable files should be saved in a folder separate from the finished work.

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

**Unit title:** Advanced Bitmap Graphics for Creative Multimedia Design

### **Outcome 3**

Analyse the optimisation of bitmap graphics

#### **Knowledge and/or skills**

- File format
- Resolution
- Dithering
- File size
- Quality
- Bit depth
- Compression
- Delivery mechanism

#### **Evidence requirements**

Candidates will need evidence to demonstrate their knowledge and/or skills by showing that they can:

- Produce a report of approximately 500 words on the impact of optimisation parameters when saving bitmap graphics in relevant file formats. At least two file formats should be covered. The report must contain good and bad examples of saved graphics and indicate clearly the reasoning for the use of specific settings.
- Save graphics in a format relevant to the given brief.

#### **Assessment guidelines**

The report may cover format specific settings. The compression systems used in popular file formats should be investigated. The delivery mechanism and its limitation on graphics formats should be considered. The issue of file size versus image quality should be wholly consistent with the given brief.

## **Administrative Information**

**Unit code:** DE2P 35

**Unit title:** Advanced Bitmap Graphics for Creative Multimedia Design

**Superclass category:** CE

**Date of publication:** November 2003

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## **Higher National Unit specification: support notes**

**Unit title:** Advanced Bitmap Graphics for Creative Multimedia Design

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 can be delivered as a stand alone Unit. It would, however, be more beneficial for candidates if it is placed in an integrated context where the final graphics are included in a multimedia project and where the delivery mechanism plays a part in the definition of the brief itself. Useful background information can be found in a variety of textbooks which are widely available. Likewise, as well as using software manuals, centres offering this Unit may find additional books useful. There may be helpful tutorials from the World Wide Web although these should be carefully worked through prior to recommending to candidates to ensure their accuracy and that vital elements have not been omitted. Candidates may find it difficult to gauge the complexity of their designs and should rely on the lecturer's judgement [in the capacity of "client"] in deciding what to include in their finished work, so that this is achievable within the time allowed.

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

This Unit is practical in nature and should be delivered in a way that reflects the workflow process in industry. Every attempt should be made to place the subject in context by analysing existing work from a similar brief. This should be seen as a means of stimulating the imagination of candidates and not in providing the solution itself. Candidates will be asked to create roughs and sketches for three composite images that fit the design brief. The development steps should be documented in a production file in each case. The production file will be an important part of the assessment evidence. The final visual in each case will then be transferred to an electronic format using a bitmap graphic software package.

Although candidates should have to become familiar with bitmap graphic software packages during the delivery of the Unit, emphasis should not be placed on software specific skills but rather on the knowledge and skills contained within the Unit. This should ensure that revisions of software does not impact on the underlying knowledge and/or skills acquired through the achievement of the Unit. Quality issues such as aliasing and pixellation should be critically considered by candidates whilst manipulating the composite images.

The written evidence takes the form of a report into the optimisation process for bitmap images. The compression systems used in relevant file formats should be included.

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

**Unit title:** Advanced Bitmap Graphics for Creative Multimedia Design

### **Open learning**

This Unit could be delivered by open learning provided suitable online materials were developed. There would also have to be a well defined brief which took into account any factors specific to open learning. Feedback from the lecturer and peers could come from the formation of an online group where discussions relevant to the Unit could take place.

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. For further information and advice, please see *Assessment and Quality Assurance for Open and Distance Learning* (SQA, February 2001 - publication code A1030)

### **Special needs**

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering special alternative Outcomes for Units. For information on these, please refer to the SQA document *Guidance on Special Assessment Arrangements* (SQA, 2001).



## **General information for candidates**

### **Unit title:** Advanced Bitmap Graphics for Creative Multimedia Design

This Unit is designed to enable you to learn about the advanced techniques of bitmap graphic software to aid in the production of creative solutions. In working to the given brief you will use the knowledge and skills you acquire in a practical way to produce 3 creative solutions in the form of composite bitmap images. The development of ideas and the input of you're your lecturer and your peers are an important part of this process. You will use advanced features of bitmap graphic software for the creation and manipulation of the graphics. The design solutions may be included as part of a multimedia presentation or project.

In Outcome 1 you should learn how to create composite images using bitmap graphic software. You should learn about: planning, scaling, opacity, layers, layout, guides, text and copyright issues. In order to achieve a pass in Outcome 1 you will need to produce: a plan for the layout of at least 3 composite images using roughs and sketches; guides and layout techniques; the 3 composite images; and the relevant copyright legislation.

In Outcome 2 you should learn how to use the advanced features of bitmap graphic software. You should learn about: layers, layer effects, special effect filters, masks and Alpha Channels.

In order to achieve a pass in Outcome 2 you will need to: manipulate 3 composite images incorporating at least 5 advanced features of bitmap graphic software; effectively organise layers within each image incorporating an appropriate naming convention; and control effect parameters within each image.

In Outcome 3 you should learn how to analyse the optimisation of bitmap graphics. You should learn about: file formats, resolution, dithering, file size, quality issues, bit depth, compression and delivery mechanisms. In order to achieve a pass in Outcome 3 you will need to: produce a report of approximately 500 words on the impact of optimisation parameters when saving bitmap graphics in relevant file formats and save graphics in a format relevant to the given brief.

On completion of this Unit you should be able to:

- Create composite images using bitmap graphic software
- Use advanced features of bitmap graphic software
- Analyse the optimisation of bitmap graphics