Higher National Unit specification

General information for centres

Unit title: Human Computer Interface

Unit code: F6BV 35

Unit purpose: This Unit is designed to provide candidates with an understanding of the interaction between users and computers by making interfaces more usable and receptive to the user's needs. The Unit will develop the skills required to design, prototype and evaluate effective and usable human computer interfaces.

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

1   Analyse the factors affecting usable interface design.
2   Design a usable interface.
3   Produce a usable interface prototype.
4   Undertake a usability evaluation of an interface.

Credit points and level: 1 HN credit at SCQF level 8: (8 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 will be at the discretion of the centre. However it is recommended that candidates should have previous experience of studying Interactive Media at Higher National Certificate level. Although differing programmes of study may be sufficient to prepare candidates for this Unit, it is recommended that they should have completed the HN Unit: F1VV 34 *User Interface Design*, prior to commencement.

Core Skills: There are opportunities to develop the Core Skill(s) of *Communication* (Written Communication) at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

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.

Assessment: 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 four separate assessment tasks detailed as follows:

♦ Outcome 1 is an open-book assessment and should take the form of a case study carried out under supervised conditions and is designed to demonstrate the candidate's knowledge and/or skills in analysing the factors affecting usable interface design for a given brief.

♦ Outcome 2 is an open-book assessment and should take the form of a case study carried out under supervised conditions and is designed to demonstrate the candidate's knowledge and/or skills in designing a usable interface for a given brief.

♦ Outcome 3 is an open-book assessment and should take the form of a practical exercise carried out under supervised conditions and is designed to demonstrate the candidate's knowledge and/or skills in developing a prototype interface from a detailed design.

♦ Outcome 4 is an open-book assessment and should take the form of a case study carried out under supervised conditions and is designed to demonstrate the candidate's knowledge and/or skills in planning and carrying out a usability evaluation of an interface.

There is an opportunity to take a more holistic approach to assessment by integrating Outcomes 1, 2, 3 and 4.

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

Higher National Unit specification: statement of standards

Unit title: Human Computer Interface

Unit code: F6BV 35

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

Analyse the factors affecting usable interface design

Knowledge and/or Skills

♦ User analysis
♦ Task analysis
♦ User profiles/persona
♦ User expectations
♦ User needs and limitations
♦ User environments
♦ End-user platforms
♦ Design implications

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can analyse the factors affecting usable interface design.

A candidates' response can be judged to be satisfactory where the evidence provided shows the candidate is able to:

♦ Conduct and document a task analysis
♦ Conduct and document a user analysis
♦ Conclude design implications from the task and user analysis

Assessment Guidelines

See Outcome 4.

Higher National Unit specification: statement of standards (cont)

Unit title: Human Computer Interface

Outcome 2

Design a usable interface

Knowledge and/or Skills

♦ Usability procedures/heuristics
♦ Layout
♦ Information Architecture
♦ Navigation
♦ Visual styles
♦ Interactive methods and styles
♦ Design Tools

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can design a usable interface.

A candidates' response can be judged to be satisfactory where the evidence provided shows the candidate is able to:

♦ produce a detailed design for an interface using appropriate design tools
♦ log/blog usability heuristics used and justification of their use

Assessment Guidelines

See Outcome 4.

Higher National Unit specification: statement of standards

Unit title: Human Computer Interface

Outcome 3

Produce a usable prototype interface

Knowledge and/or Skills

♦ Content
♦ Structure
♦ Functionality

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can develop a usable prototype interface.

A candidates' response can be judged to be satisfactory where the evidence provided shows the candidate is able to:

♦ produce a prototype interface that demonstrates all knowledge and skills

Assessment Guidelines

See Outcome 4.

Higher National Unit specification: statement of standards (cont)

Unit title: Human Computer Interface

Outcome 4

Undertake a usability evaluation of an interface

Knowledge and/or Skills

♦ Importance of usability evaluations
♦ Methods of usability evaluations
♦ Usability goals
♦ Analysis of usability evaluation results

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can successfully undertake a usability evaluation on an interface.

A candidates' response can be judged to be satisfactory where the evidence provided shows the candidate is able to:

♦ explain the importance of conducting usability evaluations
♦ plan and carry out a usability evaluation
♦ analyse usability evaluation results and make conclusions

Assessment Guidelines

The holistic assessment that integrates assessments for Outcomes 1, 2, 3, and 4 could take the form of a case study. The assessment should be carried out over an extended period.

The candidate should be provided with a brief which is sufficient enough to allow the candidate to analyse, design, prototype and undertake a usability evaluation and covers all Evidence Requirements for Outcomes 1, 2, 3 and 4. The brief must also be sufficient in that it requires the candidate to analyse, design, prototype and undertake a usability evaluation for cross platforms, for example desktop and mobile device, or mobile and games console or broadcast TV and games console.

Further information can be found in the support notes.

Administrative Information

Unit code: F6BV 35

Unit title: Human Computer Interface

Superclass category: CB

Original date of publication: August 2008

Version: 01

History of changes:

Version	Description of change	Date

Source: SQA

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Unit specification can be purchased from the Scottish Qualifications

Higher National Unit specification: support notes

Unit title: Human Computer Interface

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.

Guidance on the content and context for this Unit

This Unit is designed to provide candidates with an understanding of the interaction between users and computers by making interfaces more usable and receptive to the user's needs. The Unit will develop the skills required to design, prototype and evaluate effective and usable human computer interfaces.

Outcome 1 is designed to give the candidates knowledge and understanding of analysing briefs to enable successful usable interface design.

♦ User analysis including novice, intermittent and expert.
♦ Task analysis — information required, most important information, tasks performed by intended users, how the tasks are performed, how frequent the tasks are performed.
♦ User profiles/persona including profiles of the age, gender, physical abilities, education culture/ethnic background, training, motivation, goals, personality. This should result in a detailed description of one or more average users.
♦ User goals and expectations.
♦ User needs and limitations, skills and experience.
♦ User environments — location, technological.
♦ End-user platforms — desktop, laptop, palm top and mobile. Operating systems and browsers.
♦ Design implications.

Outcome 2 is designed to give the candidates knowledge and understanding of designing a usable interface utilising design tools, both paper and digital based like mock-ups, storyboards, wireframes, site maps, navigation maps to design a usable interface that includes appropriate usability procedures.

♦ Usability procedures/heuristics for example consistency, standards, error prevention, feed back, flexibility etc. For detailed current trends in usability check out Jacob Neilsons papers at **www.useit.com**.
♦ Layout.
♦ Information Architecture.
♦ Navigation.
♦ Visual styles.
♦ Interactive methods and styles.
♦ Design Tools.

Higher National Unit specification: support notes (cont)

Unit title: Human Computer Interface

Outcome 3 is designed to give the candidates knowledge and understanding of developing prototype interfaces from detailed designs produced in Outcome 2. The prototypes may be developed using any appropriate software that the candidate is already familiar with. Knowledge of the iterative design process is important. Different approaches to prototyping (throw away, incremental, etc) should be discussed and candidates should be encouraged to throw away faulty designs. One prototype may not be enough for a particular case study so candidates might have to produce an interface prototype to show the visual aspects, a navigation prototype showing the styles of interaction and working links and perhaps they will have to test the quality of the content or the playback system.

Outcome 4 is designed to give the candidates knowledge and understanding of undertaking a usability evaluation of an interface.

♦   Importance of usability evaluations
♦   Methods of usability evaluations, expert and end user
♦   Usability goals — time taken to perform tasks, accuracy, overall success and satisfaction
♦   Analysis of usability evaluation results

Guidance on the delivery and assessment of this Unit

The purpose of this Unit is to develop the candidates' knowledge and skills so that they can analyse, design, prototype and evaluate usable interfaces.

In the delivery, candidates should have access to the appropriate software for prototyping as well as internet access for research purposes. It would be of use to the candidate if they had completed the Unit User Interface Design, prior to taking this Unit as User Interface Design covers the visual design aspects of layout, type, colour and graphic design elements which are an important aspect of HCI.

During the holistic case study that covers the assessment for all Outcomes the candidate must implement and log or blog the techniques and strategies they have applied to a website.

A suggested delivery sequence to this Unit would be the following:

♦   Outcome 1 should be taught and assessed first so the candidate has the underpinning knowledge required for the remainder of the Unit. The candidate has been asked to analysis the factors involved in usable design of an interface. These should be discussed and candidates should have the chance to practice their analysis techniques before attempting the assessment.

♦   Outcome 4 evaluation should be taught before the candidate is assessed on any other Outcome.

♦   Outcomes 2, 3 is putting into practice the knowledge and skills gained in Outcome 1 and 4 and these Outcomes are naturally delivered in sequence.

Outcomes 1, 2, 3, and 4 may be assessed using a holistic assessment in the form of a case study that integrates each of these Outcomes. This assessment requires that the candidate be given a brief. This brief should be sufficient enough to allow the candidate to analyse, design, prototype and evaluate a usable prototype and covers all Evidence Requirements for Outcomes 2, 3 and 4.

Higher National Unit specification: support notes (cont)

Unit title: Human Computer Interface

The brief given could be for any appropriate online or offline interactive media product or software application. The brief used could be one that the candidate has been given while studying another Unit.

Opportunities for developing Core Skills

There are opportunities to develop the Core Skill(s) of *Communication* (Written Communication) at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Open learning

This Unit could be delivered by distance learning that may incorporate some degree of on-line support.

However it would require planning be the centre to ensure the sufficiency and authenticity of candidate's evidence. Agreements would have to be made to ensure the assessment for Outcome one is delivered in a supervised environment under controlled conditions.

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**

General information for candidates

Unit title: Human Computer Interface

This Unit is designed to teach about the interaction between users and computers and the importance of making interfaces more usable and receptive to the user's needs. It will allow you to develop the skills required to design, prototype and evaluate effective and usable human computer interfaces.

You will learn how to analyse the factors affecting usable interface design. This will include things like user analysis, task analysis, user profiles/persona, user expectations, user needs and limitations, user environments, end-user platforms and hence design implications.

You will learn how to design a usable interface by following usability procedures and using design tools.

You will learn how to develop a usable prototype interface for a specific brief.

And finally you will learn how to undertake a usability evaluation of an interface using different methods.

There is one assessment for this Unit which takes the form of a case study that integrates all Outcomes. You will be given a brief from which you will be required to analyse, design, prototype and evaluate a usable prototype. The brief could be for an online or offline interactive media product or software application.

On completion of the Unit you should be able to:

1   Analyse the factors affecting usable interface design.
2   Design a usable interface.
3   Produce a usable interface prototype.
4   Undertake a usability evaluation of an interface.