

National Unit Specification: General Information

UNIT Computer Applications - Design (Intermediate 2)

NUMBER D969 11

COURSE

SUMMARY

This unit is intended to introduce candidates to the hardware and software packages available to support the design process relevant to their particular discipline. It also requires candidates to demonstrate their competencies in the use of a selected package under the normal circumstances of the design process. The unit provides a good basis for further study at Higher National level.

OUTCOMES

- 1 Identify suitable hardware and software used to support the design process within a specific discipline.
- 2 Describe the constituents of a design-related software package.
- 3 Utilise a suitable software package to support the process of solving a design problem.

RECOMMENDED ENTRY

Candidates enrolling for this unit do not need any prior knowledge of design and production. However, skills in the use of Information Technology and a basic awareness of the design process would be an advantage.

CREDIT VALUE

1 Credit at Intermediate 2.

Administrative Information

Superclass: CD

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CORE SKILLS

Information on the automatic certification of any core skills in this unit is published in *Automatic Certification of Core Skills in National Qualifications* (SQA, 1999).

The achievement of this unit may contribute to the development of core skills, but the assessment arrangements for the unit do not guarantee that the candidate will produce sufficient evidence of core skills achievement. This means that there is no automatic certification of core skills for this unit.

National unit specification: statement of standards

UNIT Computer Applications: Design (Intermediate 2)

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to the Scottish Qualifications Authority.

Note On Range For The Unit

The range for the unit is fully expressed in the performance criteria.

OUTCOME 1

Identify suitable hardware and software used to support the design process within a specific discipline.

Performance Criteria

- a) An accurate list of the hardware necessary to support the relevant design process is compiled.
- b) Each hardware component is correctly described.
- c) Software packages available to support the relevant design process are identified accurately.

Evidence Requirements

Written or oral evidence that the candidate can identify suitable hardware and software as detailed in performance criteria (a) to (c). The hardware and software should be related to a specialist area of design.

OUTCOME 2

Describe the constituents of a design-related software package.

Performance Criteria

- a) The components of a specific software package are correctly identified.
- b) An accurate list of the documentation accompanying a specific design package is compiled.
- c) The purpose of each items of documentation is defined accurately.

Evidence Requirements

Written or oral evidence that the candidate can identify and describe the constituents of a software package as detailed in performance criteria (a) to (c). The software should be related to a specialist area of design.

National unit specification: statement of standards (cont)

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OUTCOME 3

Utilise a suitable software package to support the process of solving a design problem.

Performance Criteria

- a) The design problem is analysed and an accurate project plan devised.
- b) A suitable software package is selected to support the relevant design process.
- c) Software relevant to the particular design process is used correctly.
- d) The correct method of backing-up files is demonstrated.
- e) The presentation of the design solution is clear and accurate.

Evidence Requirements

Written or oral evidence that the candidate can identify and select suitable software as detailed in performance criterion (b).

Performance evidence that the candidate can use software to support specific design work as detailed in performance criterion (c).

Performance evidence that the candidate can successfully back-up files as detailed in performance criterion (d).

Performance evidence that the candidate can undertake the design process as detailed in performance criteria (a) and (e).

National unit specification: support notes

UNIT Computer Applications: Design (Intermediate 2)

This part of the unit specification is offered as guidance. None of the sections of the support notes is mandatory.

GUIDANCE ON CONTENT AND CONTEXT

It is recognised that Information Technology plays a major role in many areas of design and while it cannot replace the thought process involved in formulating a design concept, it provides an invaluable aid to the realisation of the final product.

This unit has been written in such a way that it can be delivered to candidates undertaking studies in a variety of design disciplines. It does not prescribe tasks that are software-specific but allows the tutor freedom to decide which particular software package, or packages, are relevant to the design process being studied.

Outcome 1

This is intended to provide candidates with up-to-date knowledge of the hardware and software available to support work in their particular design discipline.

Performance criteria (a), (b) and (c)

Here the candidates are being asked to demonstrate their knowledge of the specific hardware and software commercially available and used in the design process as well as their understanding of the functions of each.

In preparation for assessment the candidate should be provided with a comprehensive set of notes, listing and describing the function of each relevant piece of hardware and software.

Outcome 2

It is important that candidates are made aware of the contents of a typical software package and in particular the relevant reference, tutorial and guide books contained within it. When working towards this outcome the tutor may find the opportunity to discuss aspects of software legality, licensing and installation agreements etc.

Performance criteria (a), (b) and (c)

Candidates are expected to be able to provide a list of items included in a typical software package and define the purpose of each piece of documentation. Normally, the assessment will be based on the specific package that has been demonstrated by the tutor and used for the practical aspects of the unit.

National unit specification: support notes (cont)

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Outcome 3

This outcome integrates the use of a suitable design package with the design process. It assesses the candidate's ability to determine and utilise a suitable software package in order to achieve a solution to a design problem.

Performance criteria (a) and (e)

It is envisaged that the candidates will set a design brief where an artefact is produced and a written or oral rationale for the design solution given clearly and accurately. The completed state of the final piece should be at the discretion of the tutor and be within reason. For example, it would be unrealistic to expect that in every case candidates studying architectural design would take their project beyond the stage of final 'drawings' or scale model.

Performance criterion (b)

The candidate should provide, either written or orally, a sound argument for the selection of a particular software package.

Performance criterion (c)

This criterion requires the candidate to be observed demonstrating, correctly, the use of the software package during the process of producing an acceptable design solution.

Performance criterion (d)

The candidate should demonstrate competency in backing-up files.

GUIDANCE ON TEACHING AND LEARNING APPROACHES

The first stage involved in delivering this unit should be an introduction to the typical hardware normally associated with the particular process of design. As far as possible the function of each item should be explained and demonstrated.

Ideally the tutor should show examples of the range of software packages available to designers practising within the specific discipline being studied. He/she should identify to the candidates the contents of a software package as well as explaining its attributes and any recognised limitations. At this point aspects of software purchasing, licensing and legality may be discussed.

In relation to the practical work involved, candidates should have their own workstation and at an early stage be introduced to the techniques involved in basic file management D saving, backing-up etc. Once this has been completed it is suggested that the tutor commences tuition on the specific facilities related to the software package and as each area is covered, formative assessment takes place.

National unit specification: support notes (contd)

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It is recommended that, prior to the assessment of outcome 3, candidates are provided with an initial design brief which involves the use of the software package being studied. The assessment for this project should also be formative and will give an indication as to whether or not the candidate is ready for assessment.

The following information provides a guide to the time that should be allocated to each outcome.

Outcome 1	10 hours
Outcome 2	8 hours
Outcome 3	22 hours

Redemption time is included within the time allocated to each outcome.

GUIDANCE ON APPROACHES TO ASSESSMENT

Outcomes 1 and 2 could be assessed by an extended response question paper where the candidate is asked to:

- a) provide a list of the hardware normally used within the (specific) design process, explaining the function and purpose of each item as it is listed;
- b) compile a list of software packages relevant to the (specific) design process;
- c) describe the components of a typical software package used within the (specific) design process and the purpose of each item of its documentation.

Either a written or oral response to the above would be acceptable. In the case of an oral response the assessor should record the candidate's performance by means of a checklist.

The instrument of assessment for outcome 3 should be assignment-based and supplied in the form of a feasible design brief. The candidate should, initially, provide a comprehensive time plan, clearly indicating the stage at which the software package will be used.

The tutor may wish to integrate this assessment within another unit. However, it must be remembered that although the candidate's performance in selecting and utilising a software package is being assessed. The set design problem should also be considered to have been solved.

It is vital that the assessor used an observation checklist to record all aspects of the candidate's performance, especially in performance criteria (c) and (d).

National unit specification: support notes (contd)

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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 alternative outcomes for units. For information on these, please refer to the SQA document *Guidance on Special Assessment and Certification Arrangements* (SQA, 1998).