

Higher National Unit Specification

General information for centres

Unit title: CAD: User Systems

Unit code: DW14 34

Unit purpose: This Unit is designed to introduce candidates to systematic methods of saving and maintaining files. The Unit also introduces candidates to the operating system and user interfaces of IT applications, used as they would be in the CAD office. On completion of the Unit the candidate should be able to:

- 1 Search for specified files and investigate their properties.
- 2 Create and populate a database with specified information.
- 3 Use a spreadsheet package to calculate data using formulae.
- 4 Use a word processing package to create a formatted document.

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 no prior knowledge is required.

Core Skills: There are opportunities to develop the Core Skills of Information Technology, Numeracy and Communication at SCQF level 6 in this Unit, although there is no automatic certification of core skills or core skills components.

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 was developed for the HNC/HND Computer Aided Draughting and Design awards.

Assessment: The assessment for Outcomes 1, 2 and 3 in this Unit should be practical, while Outcome 1 will also have a written element Outcome 4 will be entirely written/word processed.

Outcomes 1, 2 and 3 should each last no longer than one hour. Outcome 4 should last no longer than 2 hours.

Outcome 1 consists of the operating system being utilised to find specific file types. These files are to be copied to predetermined directories/folders, where they will be displayed in a sorted order.

General information for centres (cont)

Outcome 2 should involve the candidate being presented with a bill of materials, extracted from a CAD system. The candidate is to create a database, with correctly defined data types, and transfer this listing into the database. The candidate must then perform a number of searches (ie queries) to locate specified components.

Outcome 3 should involve the candidate being presented with a spreadsheet containing headings and example formulae. The candidates should input the data generated in Outcome 2 and create/use formulae to calculate an accurate total costing for the components listed. The candidate must use graphical data (ie charts) to help show how the cost is affected by different processes/limitations.

Outcome 4 should consist of the candidate creating a written summary of why the processes/limitations given in Outcome 3 are required and how they affect cost. The candidate should include the graphical charts created in Outcome 3 to highlight the effect of the limitations on the cost.

Candidates should be allowed to refer to relevant course material. These assignments can be carried out at the end of the delivery of the Unit or at the end of the teaching of the subject area.

It should be noted that candidates must achieve all the minimum evidence specified for each Outcome in order to pass the Unit.

An assessment exemplar is available for this Unit.

Higher National Unit specification: statement of standards

Unit title: CAD: User Systems

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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

Search for specified files and investigate their properties

Knowledge and/or skills

- ◆ Searching for files/folders
- ◆ Wildcards
- ◆ File properties
- ◆ Clipboard
- ◆ Navigation
- ◆ Multitasking

Evidence Requirements

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

- ◆ search for specific files
- ◆ copy specific files to predetermined directories/folders
- ◆ utilise Windows Explorer to display the files in a sorted order
- ◆ investigate and explain the properties of two of the copied files
- ◆ show evidence of multitasking

Evidence should be generated through assessment undertaken in controlled, supervised conditions. Candidates should be allowed to refer to relevant course material.

Assessment guidelines

The assessment for this Outcome should take the form of a practical exercise. The assessment can be carried out after the topic has been taught or at the end of the Unit. This is at the discretion of the presenting centre. The time allocation for the assessment is no longer than one hour. It is recommended that centres develop checklists to support the assessment requirements for each of the knowledge and/or skills items.

Higher National Unit specification: statement of standards (cont)

Unit title: CAD: User Systems

Outcome 2

Create and populate a database with specified information

Knowledge and/or skills

- ◆ Data types
- ◆ Database creation
- ◆ Table population
- ◆ Creating/running queries
- ◆ Printing data

Evidence Requirements

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

- ◆ list the data types required
- ◆ enter information into a database table
- ◆ search for specific criteria within an existing table
- ◆ print a hardcopy of the query results

Evidence should be generated through assessment undertaken in controlled, supervised conditions. Candidates should be allowed to refer to relevant course material.

Assessment guidelines

The assessment for this Outcome should take the form of a practical exercise. The assessment can be carried out after the topic has been taught or at the end of the Unit. This is at the discretion of the presenting centre. The time for the complete assignment should be no longer than one hour. It is recommended that centres develop checklists to support the practical assessment requirements for each of the knowledge and/or skills items as this will assist with assessing the overall assessment.

Higher National Unit specification: statement of standards (cont)

Unit title: CAD: User Systems

Outcome 3

Use a spreadsheet package to calculate data using formulae

Knowledge and/or skills

- ◆ Entering data into a worksheet
- ◆ Formatting worksheet data
- ◆ Using formulae
- ◆ Using charts
- ◆ Printing worksheets

Evidence Requirements

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

- ◆ open a worksheet
- ◆ enter preset information into the worksheet
- ◆ use formulae to calculate data
- ◆ generate a chart from the calculated data
- ◆ create a hardcopy of the information to a given specification

Evidence should be generated through assessment undertaken in controlled, supervised conditions. Candidates should be allowed to refer to relevant course material.

Assessment guidelines

The assessment for this Outcome should take the form of a practical exercise. The assessment can be carried out after the topic has been taught or at the end of the Unit. This is at the discretion of the presenting centre. The time for the complete assignment should be no longer than one hour. It is recommended that centres develop checklists to support the practical assessment requirements for each of the knowledge and/or skills items as this will assist with assessing the overall assessment.

Higher National Unit specification: statement of standards (cont)

Unit title: CAD: User Systems

Outcome 4

Use a word processing package to create a formatted document

Knowledge and/or skills

- ◆ Keying in text
- ◆ Selecting and editing text
- ◆ Enhancing text
- ◆ Clipboard operations
- ◆ Text justification
- ◆ Inserting graphics
- ◆ Printing

Evidence Requirements

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

- ◆ create a document
- ◆ edit an existing document
- ◆ format a document
- ◆ use graphics within a document
- ◆ print the document

Evidence should be generated through assessment undertaken in controlled, supervised conditions. Candidates should be allowed to refer to relevant course material.

Assessment guidelines

The assessment for this Outcome should take the form of a practical exercise. The assessment can be carried out after the topic has been taught or at the end of the Unit. This is at the discretion of the presenting centre. The time allocation for the assessment, including the written part, is no longer than two hours. It is recommended that centres develop checklists to support the assessment requirements for each of the knowledge and/or skills items.

Administrative Information

Unit code:	DW14 34
Unit title:	CAD: User Systems
Superclass category:	CD
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Higher National Unit specification: support notes

Unit title: CAD: User Systems

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 has been written in order to allow candidates to develop knowledge, understanding and skills in the following areas:

- 1 Search for specified files and investigate their properties.
- 2 Create and populate a database with specified information.
- 3 Use a spreadsheet package to calculate data using formulae.
- 4 Use a word processing package to create a formatted document.

This Unit is at SCQF level 7 and has been devised as a Mandatory Unit within the new HNC Computer Aided Draughting and Design award. However this does not preclude the use of the Unit in other awards where award designers feel this to be appropriate.

In designing this Unit, the Unit writer has identified the range of topics that would be expected to be covered by lecturers. The writer has also given recommendations as to how much time should be spent on each Outcome assessment. This has been done to help lecturers decide what depth of treatment should be given to the topics attached to each of the Outcomes. Whilst it is not mandatory for centres to use this list of topics, it is recommended that they do so as the assessment exemplar pack for this Unit is based on the knowledge and/or skills and list of topics in each of the Outcomes.

A list of topics for each Outcome is given below. Lecturers are advised to study this list in conjunction with the assessment exemplar pack so that they can get a clear indication of the standard of achievement expected of candidates in this Unit.

Outcome 1 (6 hours)

Search for specified files and investigate their properties.

The following topics are generic in nature but should be put into context by reference to the operating system application package being used at the Centre:

- ◆ use of search tools to find files
- ◆ use of clipboard to copy files to new directories/folders
- ◆ use of Windows Explorer tools to show file details
- ◆ use of Windows Explorer tools to sort files
- ◆ explain the properties of two of the copied files detailing both the old and new file paths

Higher National Unit specification: support notes (cont)

Unit title: CAD: User Systems

Outcome 2 (12 hours)

Create and populate a database with specified information.

The following topics are generic in nature but should be put into context by reference to the spreadsheet application package being used at the Centre:

- ◆ create a database using the correct data types and specify a key field
- ◆ enter component specifications into a table
- ◆ use query tools to find components based on treatment processes
- ◆ use query tools to find components based on number of bends
- ◆ edit the quantity required
- ◆ print a hard copy of the complete table
- ◆ print a hard copy of the queries

Outcome 3 (12 hours)

Use a spreadsheet package to calculate data using formulae.

The following topics are generic in nature but should be put into context by reference to the database application package being used at the Centre:

- ◆ enter material quantity/cost into a spreadsheet
- ◆ enter man hours required
- ◆ use formulae to calculate the estimated cost of project
- ◆ edit the actual hours required
- ◆ recalculate actual total cost
- ◆ generate a chart to show how the cost is affected by tolerances/ treatments
- ◆ print a hardcopy of the spreadsheet showing the actual costs
- ◆ print the formulae used
- ◆ print only the chart

Outcome 4 (5 hours)

Use a word processor to create a typed document.

The following topics are generic in nature but should be put into context by reference to the word processing application package being used at the Centre:

- ◆ create a summary explaining the need for tolerances and heat treatment processes and how the cost is affected
- ◆ incorporate the charts created in Outcome 3
- ◆ format the document to a given standard

Higher National Unit specification: support notes (cont)

Unit title: CAD: User Systems

Unit Assessment

Outcome 1	Practical and written	1 hour
Outcome 2	Practical	1 hour
Outcome 3	Practical	1 hour
Outcome 4	Word-processed	2 hours

Guidance on the delivery and assessment of this Unit

It is intended that this Unit be presented at all times using the relevant specialist software available at the Centre. Appropriate technical and support material should be available to the candidate.

Candidates should be provided with the opportunity to gain as much ‘hands on’ experience as possible. Each candidate should have access to a PC with the relevant software installed. Candidates should NOT work in groups.

Details on approaches to assessment are given under Evidence Requirements and Assessment Guidelines under each Outcome in the Higher National Unit specification: Statement of Standards section. It is recommended that these sections be read carefully before proceeding with assessment of candidates.

Opportunities for developing Core Skills

The specific skills elements for Information Technology can be enhanced to a sophisticated level as candidates undertake the Unit. The selection of appropriate software application packages and the ability to manipulate, edit and modify numerical, graphical and textual data is an essential aspect of achievement. Selecting and importing relevant data and presenting textual, numerical and graphical information in an appropriate format on screen and in hard copy are required competences. Candidates should be encouraged to identify needs of purpose and context and to maximise the effectiveness and impact of information communication. Decisions on the appropriate and effective use of resources, including time, cost and outcome and an ability to extract information using an effective search strategy will be integral to achievement. Consideration for other users and an adherence to practices and procedures impacting on security and safety would be a routine aspect of good practice. Candidates could in some circumstances be advised on techniques for diagnosing, and if practical, correcting some technical problems.

Analysis of resource implications and accuracy of project costings involves calculation and the effective communication of numerical and graphic information is assessed in Outcome 3. Some candidates may benefit from formative opportunities to further develop their abilities to understand, analyse and apply numerical and graphic data, and access to dedicated software packages or on-line tutorials to enhance skills may be useful.

Higher National Unit specification: support notes (cont)

Unit title: CAD: User Systems

Although skills in written communication are not formally assessed, candidates should be able to analyse and summarise complex information effectively. Essential ideas, and information should be expressed coherently, using formal language and structure appropriate to professional standards. Spelling, punctuation and syntax should be accurate.

Open learning

This Unit could be delivered by distance learning, which may incorporate some degree of on-line support. The candidate would require access to a PC with the appropriate software installed. With regard to assessment, planning would be required by the centre concerned to ensure the sufficiency and authenticity of candidate evidence. Arrangements would be required to be put into place to ensure that written assessment was conducted under controlled, supervised conditions. Arrangements would also need to be made to ensure that the candidate could demonstrate that the practical assessment evidence is their own work. This could involve the candidate attending the centre, utilising video conferencing or alternatively, special arrangements could be made for the candidate to demonstrate the practical assessments to a designated, responsible person local to the candidate.

For information on normal open learning arrangements, please refer to the SQA guide Assessment and Quality Assurance of Open and Distance Learning (SQA 2000).

Candidates with additional support needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. 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. For information on these, please refer to the SQA document *Guidance on Alternative Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on SQA's website: www.sqa.org.uk.

General information for candidates

Unit title: CAD: User Systems

This Unit has been designed to provide you with the knowledge and skills that will enable you to utilise common CAD office applications. You will also learn about the effect different hardware and software configurations have on the CAD workstation.

The formal assessment for this Unit is Practical although there is a small written assessment requirement.

The actual assessment times are as follows:

Outcome 1	Practical and written	1 hour
Outcome 2	Practical	1 hour
Outcome 3	Practical	1 hour
Outcome 4	Practical	1 hour
Outcome 5	Written	2 hours