Higher National Unit specification

General information for centres

Unit title: Information Technology in Landscape Design and Management

Unit code: F1ML 35

Unit purpose: This Unit aims to introduce to the candidate some elementary but important concepts in the fields of information technology in landscape and garden design. It aims to give the candidate an understanding of the range of specialist software packages which are applicable to the Landscape industry, and how they are used in the design and management of landscape projects.

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

1   Explain the application of specialist software packages in landscape design and management.
2   Explain the use of computer aided design (CAD) software.
3   Utilise a CAD package to produce documentation relevant to a landscape project.

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 is at the discretion of the delivering centre however, a prior knowledge of information technology including internet access is desirable but not essential. It would also be preferable (but not essential) for candidates to possess some form of horticultural knowledge (at a design end) or have some experience in planning/drawing.

Core Skills: There are opportunities to develop the Core Skills of *Problem Solving*, *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.

Assessment: A sequential approach to assessment would be undertaken with each learning Outcome being assessed numerically. Outcomes 1 and 2 would be assessed via library and internet based research resulting in the formulation and submission of two case study type portfolios. Outcome 3 would be assessed via the planning, design, development and completion of a garden/landscape design produced using CAD software.

Higher National Unit specification: statement of standards

Unit title: Information Technology in Landscape Design and Management

Unit code: F1ML 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

Explain the application of specialist software packages in landscape design and management

Knowledge and/or Skills

♦ Computer Aided Design
♦ Specialist Software in Landscape Management
♦ Data standards & exchange
♦ Landscape Project Management

Evidence Requirements

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

♦ identify suitable specialist software packages for a given scenario
♦ describe strengths and limitations of software packages
♦ select appropriate specialist software package and justify choice

Case study approach involving both library and internet based searches with the end result being a submission of a portfolio.

Assessment Guidelines

This Outcome can be assessed by an assignment which requires the candidate to produce a portfolio of evidence based on a case study. This could involve both library and internet based searches with the end result being a submission of a portfolio of selected specialist software packages and the candidate's recommendation.

Higher National Unit specification: statement of standards (cont)

Unit title: Information Technology in Landscape Design and Management

Outcome 2

Explain the use of Computer Aided Design (CAD) software

Knowledge and/or Skills

♦ Hardware and Software requirements including peripherals
♦ Personnel Skills and Training
♦ User Environment
♦ Advantages of digital drawing methods

Evidence Requirements

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

♦ identify hardware requirements
♦ identify software requirements
♦ identify and contrast requirements for small and large businesses

Case study approach involving both library and internet based searches with the end result being a submission of a port folio.

Assessment Guidelines

This Outcome can be assessed by an assignment which requires the candidate to produce a portfolio of evidence based upon a case study. This could involve both library and internet based searches with the end result being a submission of a portfolio of selected specialist hardware/software and peripheral packages for different types of business.

Outcome 3

Utilise a given CAD package to produce documentation relevant to a landscape project

Knowledge and/or Skills

♦ Creation of plan
♦ Transfer plan to CAD system
♦ Dimension and Layer correctly and appropriately
♦ Store and print final drawing

Higher National Unit specification: statement of standards (cont)

Unit title: Information Technology in Landscape Design and Management

Evidence Requirements

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

♦ produce, using a suitable CAD system, a design for a garden or landscape feature

Assessment Guidelines

This Outcome can be assessed by an assignment where the candidate is required to produce a CAD design.

Administrative Information

Unit code: F1ML 35

Unit title: Information Technology in Landscape Design and Management

Superclass category: CH

Original date of publication: August 2007

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 Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.

Higher National Unit specification: support notes

Unit title: Information Technology in Landscape Design and Management

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

The purpose of this Unit is to introduce the student to a range of specialist software packages for use in the landscape management and design profession. One specialist package will be developed by practical application, to introduce students to specific skills. This Unit has been designed to provide students with a solid understanding and awareness of the use of digital drawing technology in both the garden design and landscape management environment. It has been deliberately designed at a very generic level and is suitable for inclusion within any landscape/garden design based Course.

The delivery of information within this Unit will be via variable methods including formal lectures, tutorials, discussions and specific problem solving exercises using CAD software. Additional material such as PowerPoint presentations, additional supplemental reading and CAD based exercises are to be found on Blackboard. This will facilitate out of college learning and understanding.

The candidate will have access to computer systems that will enable them to develop and investigate the use of a CAD software application. Typically an application such as AutoCAD will be used with the possible use of a specialist landscape application such as Landcad or Artisan. Adoption of industry standards through the utilisation of commercial software gives this Unit a global context. The Unit is aimed at an introductory level which will give sufficient grounding to those students who wish to develop their skills to a more advanced stage through personal study.

The following skills are likely to be incorporated within the design project, and although these are specific to AutoCAD, other packages are likely to show similar capability:

Using Model Space and Paper Space
Understanding 2D vs. 3D co-ordinate structure

Drawing commands.	lines, circles, arcs, polylines.
Construction commands:	copy, mirror, chamfer, block, attributes.
Hatching commands:	fonts/styles, annotation of drawings, dimensioning of drawings.
Editing commands:	erase, undo, trim, extend, stretch, move, scale, rotate.
View commands:	redraw, zoom, pan.
Layering:	on/off, lock/unlock. An understanding of the use of layers in presentation of different information relevant to different situations.
Saving:	saving files, Backup to disc and external media.
Scale:	an understanding of the ability to produce information at any desired scale.
Drawing layouts:	page design, title blocks, paper sizes.
Output devices:	pen plotter, inkjet plotter, laser printer.

Higher National Unit specification: support notes

Unit title: Information Technology in Landscape Design and Management

The candidate will be able to obtain a thorough grounding in the use of the current industry standard CAD package AutoCAD. This package will be employed to produce a detailed drawing of a garden design or landscape feature. In addition to the use of the software the candidate will be shown how to use file management software, palette generation and project management software.

Corresponding to Outcomes:

Outcome 1 will be taught with reference to what CAD is and how it can be applied from a variety of situations in terms of function and use. Lots of different software options will be examined and their strengths and limitations discussed.

Outcome 2 will examine the changes that have occurred in computer evolution and how software has adapted to these changes in hardware. In addition specific user situations will be examined where the most appropriate hardware/software will be identified for a given user environment and budget.

Outcome 3 will be examined by the candidate's ability to produce a digital drawing done entirely in CAD. The use of specific tools, layers and dimensions will all be examined with the goal of producing a detailed drawing of a garden or landscape feature.

Guidance on the delivery and assessment of this Unit

It is recommended that this Unit be taught through a series of lectures and tutorials supplemented where necessary and appropriate with practical based exercises.

In this Unit assessment may be through a combination of case study/portfolio type presentations which could be presented either written and/or orally by the candidate.

Opportunities for developing Core Skills

There are opportunities to develop the Core Skills of *Problem Solving*, *Numeracy* and *Communication* at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Higher National Unit specification: support notes

Unit title: Information Technology in Landscape Design and Management

Open learning

Elements of this Unit could be delivered via distance learning or indeed via a flexible learning approach. Certain aspects though, such as the use of CAD and software packages would require the candidate to be present at the centre. Although it would be beneficial for the candidate to attend the centre for supervised assessments, this, in theory, could be accomplished via off centre locations with appropriate conditions (such as software availability).

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**).

General information for candidates

Unit title: Information Technology in Landscape Design and Management

This Unit is designed to introduce you to some elementary but important concepts in the fields of information technology in landscape and garden design. It aims to give you an understanding of the range of specialist software packages which are applicable to the Landscape industry, and how they are used in the design and management of landscape projects.

On completion of the Unit you should be able to:

1 Explain the application of specialist software packages in landscape design and management.
2 Explain the use of computer aided design (CAD) software.
3 Utilise a CAD package to produce documentation relevant to a landscape project.

You will be assessed in this Unit by means of a portfolio of evidence based on a case study for Outcome 1 and 2 and by a practical assignment to produce a CAD design.