



Higher National Unit Specification

General information for centres

Unit title: Forestry: Use of Computers in Forest Management

Unit code: F401 35

Unit purpose: This Unit is designed to give the candidate understanding and knowledge of how computing systems, hardware and software are used to aid forest management.

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

- 1 Evaluate the use of computers within a forestry organisation.
- 2 Use computer technology for forest management tasks.

Credit points and level: 1 HN credit(s) 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 centre. Prior knowledge of basic computer use including standard software programmes would be helpful to the candidate.

Core Skills: There are opportunities to develop the Core Skills of *Information Technology* and the Critical Thinking component of *Problem Solving* to SCQF level 6 and, *Numeracy* to SCQF level 5 although there is no automatic certification of Core Skills or the 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 is included as optional in the framework of the following Group Awards:

- ◆ HND Forestry
- ◆ HND Arboriculture and Urban Forestry

General information for centres (cont)

Assessment: The assessment for this Unit may take the form of:

- 1 A project evaluating the use of computers in forest management within a forest organisation (Outcome 1).
- 2 An exercise designed to display and apply the use of computer programs for forest management purposes (Outcome 2).

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

Evaluate the use of computers within a forestry organisation

Knowledge and/or Skills

- ◆ Forestry organisation
- ◆ Computer hardware
- ◆ Computer software
- ◆ Networking and accessing software skills
- ◆ Commonly processed data
- ◆ Information flow

Evidence Requirements

Candidates will select a forestry-related organisation with agreement from the tutor. Candidates will need evidence to demonstrate their Knowledge and/or Skills by showing that they can evaluate the computer system and main computer programmes within the selected forestry organisation by:

- ◆ describing the computer hardware and software used in the selected forestry organisation
- ◆ identifying the data that is commonly processed by the computer system in place.
- ◆ evaluating the use of computer hardware and software for the purposes of the forest organisation. This must include both forest management and the organisation's operational purposes and how the system is networked and accessed.
- ◆ drawing conclusions from the evaluation and making any recommendations in line with conclusion and the organisation's needs.

Higher National Unit specification: statement of standards (cont)

Unit title: Forestry: Use of Computers in Forest Management

Assessment Guidelines

Outcome 1 could be assessed by an assignment. The evidence of achievement could take the form of an individual report on the hardware and programs used within a forest industry organisation. (suggested word limit of 1,500 words or equivalent).

The evidence of achievement for Outcome 1 could be the form of an individual project based on the evaluation of the use of computers within a forestry organisation. This could be carried out as part of a placement period in industry or on an organisation known to the candidate or on a hypothetical organisation presented to the candidates by the tutor.

The project could include:

- ◆ hardware and software employed
- ◆ networking of system
- ◆ uses computers put to: letters; calculations; data storage; graphics; mapping; wages; invoicing; communications; etc
- ◆ an evaluation of the computer use throughout the organisation for data capture and analysis

Outcome 2

Use computer technology for forest management tasks

Knowledge and/or Skills

- ◆ Data input
- ◆ Computer program use
- ◆ Data analysis
- ◆ Management features

Evidence Requirements

Candidates will need evidence to demonstrate their knowledge and/or skills by showing that they can use computer technology in a forestry management analysis context. Candidates must:

- ◆ input data from a given source into a computer program
- ◆ analyse the findings
- ◆ document their findings in the form of
 - a map that contains at least two management features
 - or**
 - a spreadsheet which uses at least two calculations and links at least two sheets within the spreadsheet
 - or**
 - a report produced using computer technology which includes word processed, tabular/chart information, and annotated photographs

Higher National Unit specification: statement of standards (cont)

Unit title: Forestry: Use of Computers in Forest Management

Assessment Guidelines

Outcome 2 could be assessed by a practical exercise in which the candidate collects, inputs and displays data for forestry management analysis purposes. This could include maps or spreadsheets or reports incorporating data in different forms.

Administrative Information

Unit code: F401 35

Unit title: Forestry: Use of Computers in Forest Management

Superclass category: CH

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History of changes:

Version	Description of change	Date

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Higher National Unit specification: support notes

Unit title: Forestry: Use of Computers in Forest Management

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocation for this Unit is at the discretion of the centre, the notional length is 40 hours.

Guidance on the content and context for this Unit

This Unit is designed as an optional part of the following SQA Group Awards:

- ◆ HND Forestry
- ◆ HND Arboriculture and Urban Forestry

The content of this Unit should provide the candidate with an understanding of the wide range of functions a computer system can perform in relation to the management of forest organisations and forest management.

This Unit could be used to help the candidate explore and benefit from the understanding of a computer system in a forest organisation and the Unit lends itself to giving students credit on an industrial placement period or credit for those seeking CPD by distance learning.

The following support notes cover the mandatory requirements of the Unit and recommended aspects that could be covered in teaching and learning.

Outcome 1

The candidates could study an existing system that they are familiar with or be set a task to outline hardware and software requirements to meet specific needs. This will develop their evaluative and problem solving skills. They will need to be familiar with computer hardware and the software packages that are readily available and suitable for use for forestry organisations. This can be evaluated simply by referring to for example the required power of hardware, networking, accountancy packages for office management, spreadsheets for information analysis and calculation, stock control, mapping, forest records, etc.

Outcome 2

Candidates could be set tasks to perform. This may include a new software tool that may have been introduced or an application of software that they are not fully familiar with. This approach allows candidates at different levels to engage with this Unit and achieve it.

Candidates could also be encouraged to create a portfolio of evidence collected over a set period to display the use they have been putting computers to and the packages that they have used. This could be carried out in self study time with tutor guidance.

Higher National Unit specification: support notes (cont)

Unit title: Forestry: Use of Computers in Forest Management

Guidance on delivery and assessment of this Unit

It is envisaged that the candidate will develop a wider knowledge of the software, hardware and networks used in forest companies and for what purposes (planning, reports, accounts, information storage and communications).

Outcome 1

The evidence of achievement for Outcome 1 could take the form of a project where the candidate could be given a task to outline and evaluate an existing computer system within a forest organisation. This model lends itself to an industrial placement period or for candidates doing CPD. Otherwise the candidate could be given a project to outline the use of computer technology for a given situation.

Outcome 2

The evidence of achievement for Outcome 2 could take the form of a portfolio of exercises covering reports, spreadsheets for data storage, calculations and general use and mapping. This evidence will have to be verified as the candidates own work and will be built up through evidence from other Units or other candidate work.

Alternatively set tasks of mapping and or spreadsheets could be designed to display the candidate's competency in using such programs and to develop skills where they may be lacking.

The data used to populate spreadsheets and programs could be data from other Units where candidates have carried out mensuration, mapping, report production. The data isn't being re-assessed. It is the use of the programs that is being assessed.

The Outcome could also be used to produce evidence of the candidate's use of additional forestry related computer programs that they have not yet had experience of.

Higher National Unit specification: support notes (cont)

Unit title: Forestry: Use of Computers in Forest Management

Opportunities for developing Core Skills

There are opportunities to develop the Core Skills of *Information Technology* to SCQF level 6. Candidates will be required to work with a range of complex data, analyse findings and produce documentation using computer technology. *Numeracy* may be developed to SCQF level 5 in that candidates will be required to work with numerical data and produce graphical information. The component of Critical Thinking may be developed to SCQF level 6 in Outcome 1 where candidates have to evaluate the use of computer technology within a forestry organisation, draw conclusions and make recommendations.

Open learning

All Outcomes are appropriate for Open and Distance Learning approaches with candidate packs and Tutor input and support at all stages. Centre devised supervision agreements should detail controlled conditions to ensure authenticity of evidence.

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: Forestry: Use of Computers in Forest Management

This Unit is designed to provide you with a knowledge and understanding of the role computers play in forest management from mensuration and mapping to evaluative processing and display of data. The Unit looks at the role computers play in forest organisations as well as at specific programs that are of use to the forest manager and at how they may be employed.

The Outcomes that you will acquire on completion of the Unit are as follows:

Outcome 1 will give you an understanding of the breadth of the use of computers in forest organisations and the applications they are put to for both forest management purposes and the efficient running of the organisation in all its aspects.

Outcome 2 will give you an understanding of how different programs can be used to aid forest management through the use of data capture and manipulation through complex calculations, mapping techniques and report production.

This Unit is an optional component of the following SQA Group Award:

- ◆ HND Forestry
- ◆ HND Arboriculture and Urban Forestry

Overall, the knowledge and skills acquired in this Unit will help you appreciate the role computers play in forest management and to understand and evaluate their use and importance.

For candidates already in employment this Unit provides an opportunity to extend existing knowledge and skills and lays a sound grounding for further study in the application of computers for forest management.

This Unit will give you the opportunity to develop the Core Skills of *Information Technology* and the Critical Thinking component of *Problem Solving* to SCQF level 6 and, *Numeracy* to SCQF level 5. This will be done through the use of spreadsheet calculations, tables, mapping and data manipulation.

The Unit may be assessed by report submissions based on actual experience in the workplace or on given scenarios.