



Higher National Graded Unit specification

General information for centres

This Graded Unit has been validated as part of the Forestry HNC. Centres are required to develop the assessment instrument in accordance with this validated specification. Centres wishing to use another type of Graded Unit or assessment instrument are required to submit proposals detailing the justification for change for validation.

Graded Unit title: Forestry: Graded Unit 1

Graded Unit code: F4SH 34

Type of Graded Unit: Project

Assessment Instrument: Case Study

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.*

Purpose: This Graded Unit is designed to provide evidence that the candidate has achieved the following principal aims of the Forestry HNC:

- ◆ to understand the principles of silviculture and harvesting relating to forestry in the context of current European, national and regional initiatives on forestry and woodland management
- ◆ to develop an understanding of current harvesting and silvicultural techniques with reference to industry best practice as established through the Forestry Standard, the UK Woodland Assurance Scheme and the requirements for sustainable forest management
- ◆ to understand the principles of operation management and supervision in the context of current legislation with particular regard to risk assessment, risk management and environmental protection
- ◆ to understand measurement techniques in relation to land and forests in the context of current best practice and technology

Recommended prior knowledge and skills: It is recommended that the candidate should have completed or be in the process of completing the following Units relating to the above specific aims prior to undertaking this Graded Unit:

- | | |
|---|---------|
| ◆ <i>Forestry: Forest Science</i> | F3YW 34 |
| ◆ <i>Establishment of Woodland</i> | F3YC 34 |
| ◆ <i>Forest Harvesting</i> | F3YD 34 |
| ◆ <i>Employment and Health and Safety Legislation for the Land Based Industries</i> | F0VP 34 |
| ◆ <i>Forestry Operations: Work Programming</i> | F3YM 34 |

General information for centres (cont)

Core Skills: There are opportunities to develop the Core Skills of *Problem Solving* and Numeracy, and the Written component of *Communication* at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Assessment: This Graded Unit will be assessed by the use of a Case Study. The developed Case Study should provide the candidate with the opportunity to produce evidence that demonstrates she/he has met the aims of the Graded Unit that it covers. The Case Study will be carried out within the framework of current forest policies taking global issues into consideration such as international trade, and the effects of climate change on forest management prescriptions. In addition due emphasis should be placed on European Directives on forest and woodland development and national strategies for sustainable forest development and management as determinants of recommendations within the Case Study. Operational prescriptions should have particular reference to risk assessment and management, the control of substances and materials and environmental protection and conservation measures. All of this should be addressed within the current legislation and regulation framework and reflect industry best practice.

Administrative Information

Graded Unit code: F4SH 34
Graded Unit title: Forestry: Graded Unit 1
Original date of publication: August 2008
Version: 01

History of changes:

Version	Description of change	Date

Source: SQA

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Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates

Graded Unit title: Forestry: Graded Unit 1

Conditions of assessment

The candidate should be given a date for completion of the Case Study. However, the instructions for the assessment task should be distributed to allow the candidate sufficient time to assimilate the details and carry out the assessment task. During the time between the distribution of the assessment task instructions and the completion date, assessors may answer questions; provide clarification, guidance and reasonable assistance. The assessment task should be marked as soon as possible after the completion date. The final grading given should reflect the quality of the candidate's evidence at the time of the completion date.

The evidence for the project is generated over time and involves three distinct stages, where each stage has to be achieved before the next is undertaken. Thus any re-assessment of stages must be undertaken before proceeding to the next stage.

If a candidate fails the project overall or wishes to upgrade, then this must be done using a *substantially different* project, ie all stages are undertaken using a new project, assignment, case study, etc. In this case, a candidate's grade will be based on the achievement in the re-assessment, if this results in a higher grade.

Instructions for designing the assessment task

The assessment task is a project. The project undertaken by the candidate must be a complex task which involves:

- ◆ variables which are complex or unfamiliar
- ◆ relationships which need to be clarified
- ◆ a context which may be familiar or unfamiliar to the candidate

The assessment task must require the candidate to:

- ◆ analyse the task and decide on a course of action for undertaking the project
- ◆ plan and organise work and carry it through to completion
- ◆ reflect on what has been done and draw conclusions for the future
- ◆ produce evidence of meeting the aims which this Graded Unit has been designed to cover

The assessment task used must reflect the national standard of achievement required at SCQF level 7. It must be designed to incorporate the three mandatory project stages of planning, developing and evaluating, as well as to support and further the aims of the Forestry HNC.

The project comprises a Case Study in which candidates devise an operational plan for a forest or woodland. Candidates must demonstrate the application of skills and knowledge within the context of forestry management.

The operational plan will require candidates to produce information on the proposed planning and control of one of three options: a forest establishment, forest maintenance or forest harvesting operation; at a given or agreed site.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

The case study will provide information such as woodland data, site maps, and aerial photographs. Based on the given information, the operational plan devised by candidates should state operational objectives, technical proposals, and should detail the planning for the operation as well as the control measures to be applied. It should include a site description, technical details, simple budgets, resources, health and safety procedures, training requirements and other land uses.

In producing their operational plan, candidates will need to:

- ◆ interpret data
- ◆ gather information in response to site details, crop details, technical details, government initiatives and policies and markets (if appropriate)
- ◆ demonstrate the ability to develop concepts, and integrate research and analysis,
- ◆ investigate and analyse
- ◆ demonstrate the application and use of a broad range of technical knowledge and skills
- ◆ demonstrate the application and use of a range of relevant equipment

The operational plan should consider:

- ◆ relevant international trade issues
- ◆ cultural and national issues
- ◆ market and stakeholder needs
- ◆ organisational objectives
- ◆ staffing and organisational issues

The operational plan should include:

- ◆ operational objectives
- ◆ site details
- ◆ crop details
- ◆ technical details on candidates' proposals
- ◆ set up controls
- ◆ methods of control
- ◆ record keeping
- ◆ research analysis methods
- ◆ comparison of job books

Having produced the operational plan, candidates will then:

- ◆ evaluate the process
- ◆ assess the effectiveness and range of their own knowledge and skills in respect to their operational plan

The project will be submitted on an individual basis under the guidance of the tutor with a suggested word limit of 2,000 words or equivalent for the operational plan.

The Case Study and its planning should allow opportunities for candidates to conduct individual research and development. Candidates should be provided with a choice of topics that reflects the diversity and range of the delivering centre.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

The project requires candidates to integrate skills in order to produce an operational plan for their given or agreed site. Candidates should be asked to consider research, analyse and develop diverse solutions and decide on the most appropriate operational plan.

Each candidate must document their individual responses to each of the three stages of the Graded Unit, with individual responses to stages 1 and 2 presented in the form of an operational plan, and stage 3 in an evaluation.

Stage 1: Planning

The planning stage should culminate in an outline proposal containing evidence of research and an initial action plan.

Stage 2: Developing

The developing stage will be evidenced by the production of an operational plan that has been developed from work initiated as part of the planning process. This will incorporate the production stages associated with:

- ◆ familiarisation of site(s)
- ◆ interpretation of data
- ◆ market research
- ◆ operational techniques
- ◆ current costings

Stage 3: Evaluating

The final stage will be evidenced by an evaluation of the project. Candidates should critically analyse the operational plan, success of the operational plan within the context of the current policies and strategies and review the effectiveness of their planning process.

Candidates should use suitable terminology, and where appropriate, use language associated with the Forestry industry to clearly justify decisions and to reflect on possible amendments that could improve the final operational plan.

All stages should be completed in a timeous manner, meeting the schedule produced in the planning stage.

Guidance on grading candidates

Candidates who meet the minimum Evidence Requirements will have their achievement graded as C — competent, or A — highly competent or B somewhere between A and C. The grade related criteria to be used to judge candidate performance for this Graded Unit is specified in the following table.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

Grade A	Grade C
<p>Is a seamless, coherent piece of work which:</p> <ul style="list-style-type: none"> ◆ has comprehensive evidence for the three essential phases of the project, and is quite clearly interrelated ◆ includes comprehensive and reliable research ◆ uses a planned, highly focussed and systematic approach with regard to the analysis of the operational plan materials ◆ demonstrates a perceptive analysis of the operational plan materials ◆ effectively consolidates and integrates knowledge and skills, showing continuity and consistency ◆ fully incorporates current policies and strategies in the operational plan ◆ is clear and well structured throughout, with language used of a high standard in terms of level, accuracy and technical content 	<p>Is a co-ordinated piece of work which:</p> <ul style="list-style-type: none"> ◆ has sufficient evidence of the three essential phases of the project but not clearly inter-related ◆ includes some research ◆ uses a planned approach to the analysis of the operational plan materials ◆ demonstrates analysis of the operational plan materials ◆ consolidates and integrates knowledge and skills ◆ incorporates elements of current policies and strategies in the operational plan ◆ is satisfactorily structured with language used adequate, in terms of level, accuracy and technical content

The project will be marked out of 100. Assessors will mark each stage of the project, taking into account the criteria outlined. The marks will then be aggregated to arrive at an overall mark for the project. Assessors will then assign an overall grade to the candidate for this Graded Unit based on the following grade boundaries.

A = 70% — 100%

B = 60% — 69%

C = 50% — 59%

Note: the candidate must achieve all of the minimum evidence specified below for each stage of the project in order to achieve the Graded Unit.

Evidence Requirements

The project consists of three stages: planning; developing; and evaluating. The following table specifies the minimum evidence required to pass each stage.

Note: The candidate must achieve **all of the minimum evidence** specified below for each stage of the project in order to pass the Graded Unit.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

Project stage	Minimum Evidence Requirements
Stage 1 — Planning 20%	<p>An initial action plan which includes:</p> <ul style="list-style-type: none"> ◆ identification of the aims of the case study ◆ selection and justification of the tasks required to undertake the case study ◆ identification of research required to complete the case study ◆ a plan for managing and completing the project within a realistic timescale <p><i>The candidate must achieve all of the minimum evidence specified above in order to pass the Planning stage.</i></p>
Stage 2 — Developing 60%	<p>The case study will require the candidate to produce an operational plan which addresses the issues identified in the case study scenario. This will include evidence of:</p> <ul style="list-style-type: none"> ◆ collation of research undertaken and summary of findings ◆ further analysis of the case study scenario and research in terms of: <ul style="list-style-type: none"> — relevant international trade issues — cultural and national issues — market and stakeholder needs — organisational objectives — staffing and organisational issues <p>The operational plan should include:</p> <ul style="list-style-type: none"> ◆ operational objectives ◆ site details ◆ crop details ◆ technical details on candidates' proposals ◆ set up controls ◆ methods of control ◆ record keeping ◆ research analysis methods ◆ comparison of job books <p><i>The candidate must achieve all of the minimum evidence specified above in order to pass the Developing stage.</i></p>

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

Project stage	Minimum Evidence Requirements
Stage 3 — Evaluating 20%	<p>An evaluation which includes:</p> <ul style="list-style-type: none"> ◆ an overview of the planning and developing stages of the project, including the effectiveness of the planning process, and any modifications made to the operational plan during the planning/developing stages ◆ critical analysis of the operational plan, within the context of the current policies and strategies, and appraisal in terms of its strengths and weaknesses ◆ evaluation of research carried out ◆ identification of any knowledge and skills which have been gained or developed during the project <p><i>The candidate must achieve all of the minimum evidence specified above in order to pass the Evaluating stage.</i></p>

Support notes

This Graded Unit is designed to harness the skills, knowledge and competences that the candidate has gained during the majority of the HNC and in particular to reflect the skills and knowledge gained through the following Units, which should be completed or in progress:

- ◆ *Forestry: Forest Science* F3YW 34
- ◆ *Establishment of Woodland* F3YC 34
- ◆ *Forest Harvesting* F3YD 34
- ◆ *Employment and Health and Safety Legislation for the Land Based Industries* F0VP 34
- ◆ *Forestry Operations: Work Programming* F3YM 34

Candidates should undertake the Graded Unit as an individual project. The project is likely to provide scope for the development of the written component of *Communication*, and the Core Skills of *Numeracy*, *Working with Others* and *Problem Solving* at SCQF level 5. The project should involve the application and integration of a variety of knowledge and skills gained in the majority of the HNC. This project should be completed within a predetermined timescale, with time for mentoring and feedback also taken into account. It is suggested that a word limit of 2,000 words or equivalent is appropriate for the operational plan.

The operational plan should include the following:

- ◆ operational objectives.
- ◆ site details — name, location, area, ownership, site factors, access, vegetation, soils.
- ◆ crop details — species existing or chosen, areas of each, growth rates, age class, layout, volumes if appropriate. Stand assortment, if appropriate.
- ◆ technical details on candidates' proposals — work method, description, resources, site preparation and layout.
- ◆ set up controls — job specification, costs/revenues, production targets, output, resource requirements, environmental specification, health and safety requirements.
- ◆ methods of control — communication, observation, measurement, sampling.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

- ◆ record keeping — progress charts
- ◆ research analysis methods — observation
- ◆ comparison of job books

The operational plan is likely to have the following format:

- ◆ title
- ◆ contents
- ◆ introduction
- ◆ findings
- ◆ conclusions
- ◆ recommendations
- ◆ references
- ◆ appendices

A mentoring system would help candidates in ensuring that they carry out relevant preparation for the task and are able to meet relevant deadlines. However, candidates should undertake the three project stages with a minimum of supervision of their work. A suggested marking strategy could be:

The Planning stage:	20 marks and candidates must achieve a minimum of 10 marks to pass.
The Development stage:	60 marks and candidates must achieve a minimum of 30 marks to pass.
The Evaluation stage:	20 marks and candidates must achieve a minimum of 10 marks to pass.

At all stages and with any marking scheme used, the minimum pass mark must be commensurate with the minimum Evidence Requirements, as detailed in the previous section.

Core Skills

The delivery and assessment of this Unit may offer opportunities to develop the Core Skill of *Problem Solving* at SCQF level 5. Its three components Critical Thinking, Planning and Organising and Reviewing and Evaluating require candidates to be able to:

- ◆ analyse a situation or issue
- ◆ plan, organise and complete a task
- ◆ review and evaluate a problem solving activity

Candidates will be required to use these skills throughout the Graded Unit, with analysis and planning particularly relevant to stages 1 and 2, and the completion of the operational plan. Critical Thinking and Planning and Organising will be developed by candidates when fulfilling the requirements of the plan in which they must consider current forest policies, and global issues such as international trade and climate change. They will also need to consider such variables as substances and materials within the current legislation and regulation framework. Review and evaluation will include conclusions based on the research and data obtained and will reflect on the effectiveness of the planning process, and the operational plan itself.

Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)

The delivery and assessment of this Unit may contribute towards development of the Core Skill of *Numeracy* at SCQF level 5. The component Using Number may be developed when looking at resources, budgeting and other planning issues. The general skill for this component is ‘apply a wide range of numerical skills in everyday and generalised contexts.’ In so doing, candidates may need to perform the component’s specific skills as follow:

- ◆ work confidently with a numerical concept
- ◆ decide on the numerical operations to be carried out
- ◆ carry out complex calculations or a number of sustained calculations

The general skill required by the component Using Graphical Information is the ability to ‘interpret and communicate graphical information in everyday and generalised contexts’. Specific skills include the interpretation of information from tables, graphs, etc. and communication of information by appropriately incorporating such tables and graphs. Again, candidates may meet these criteria where dealing with data collected for and during the developing stage of the Graded Unit, particularly for budgeting purposes, the results of which may illustrated via tables, graphs, or percentages.

The delivery and assessment of this Unit may contribute towards the component Written Communication of the Core Skill of *Communication* at SCQF level 5. The general skills of the component are ‘read, understand and evaluate written communication’ for its reading element and ‘produce well-structured written communication’ for its written element. Specific reading skills required by candidates at SCQF level 5 include identifying and summarising significant information, ideas and supporting details in a written communication, and evaluation of the effectiveness of the communication in meeting its purpose; and specific writing skills include presenting all essential ideas, information and supporting detail in a logical and effective order, and use of a structure which takes account of purpose and audience, emphasising the main points.

There is a wide scope for candidates to utilise these and other related specific skills at each stage of the Graded Unit. From their initial action plans, through to collating, summarising and analysing research candidates may utilise and develop Written Communication. These skills may also be developed during the third stage when candidates must evaluate their plans, findings and the project as a whole.

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 assessment arrangements. For information on these, please refer to the SQA document *Guidance on 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

This Graded Unit is a Project: *Case Study*. It has been designed to allow you to integrate your learning from across a range of Units studied within the Forestry HNC. You will draw upon knowledge and skills gained from the individual Units and integrate these to successfully complete the project.

This Graded Unit will allow you to:

- ◆ understand the principles of silviculture and harvesting relating to forestry in the context of current European, national and regional initiatives on forestry and woodland management
- ◆ develop an understanding of current harvesting and silvicultural techniques with reference to industry best practice as established through the Forestry Standard, the UK Woodland Assurance Scheme and the requirements for sustainable forest management
- ◆ understand the principles of operation management and supervision in the context of current legislation with particular regard to risk assessment, risk management and environmental protection
- ◆ understand measurement techniques in relation to land and forests in the context of current best practice and technology

You will produce an operational plan for the proposed planning and control of one of the following three options: a forest establishment, forest maintenance or forest harvesting operation; at a given site or one agreed with your tutor.

The operational plan you devise should state operational objectives, technical proposals, and should detail the planning for the operation as well as the control measures to be applied. It should include a site description, technical details, simple budgets, resources, health and safety procedures, training requirements and other land uses as appropriate. You will be required to:

- ◆ interpret data
- ◆ gather information in response to site details, crop details, technical details, government initiatives and policies and markets (if appropriate)
- ◆ investigate and analyse
- ◆ demonstrate the ability to develop concepts, and integrate research and analysis,
- ◆ demonstrate the application and use of a broad range of technical knowledge and skills
- ◆ demonstrate the application and use of a range of relevant equipment
- ◆ produce an operational plan
- ◆ evaluate the process of producing the operational plan
- ◆ assess the effectiveness and range of your own knowledge and skills in respect to your operational plan

The project will be submitted on an individual basis under the guidance of the tutor with a suggested word limit of 2,000 words or equivalent, for the operational plan.