



Higher National Graded Unit specification

General information for centres

This Graded Unit has been validated as part of the HND Agricultural Science. 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: Agricultural Science: Graded Unit 3

Graded Unit code: F3R2 35

Type of Graded Unit: Examination

Assessment Instrument: Closed-book Examination

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.*

Purpose: This Graded Unit is designed to provide evidence that the candidate has achieved the following principal aims of the HND Agricultural Science, which are to:

- ◆ Provide the candidate with a deeper underpinning knowledge and understanding of the biological and physical sciences of relevance to the agricultural industry
- ◆ Develop candidates' knowledge and understanding of the applications of scientific principles and techniques to support the agricultural industry
- ◆ Develop candidates' knowledge and understanding of crop and livestock production systems, their management and the economic, environmental, regulatory and animal welfare issues that influence these sectors
- ◆ Prepare candidates for progression to degree level study in Agricultural Science and related areas

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 these specific aims prior to undertaking this Graded Unit:

Unit code	Unit title
F2E5 35	<i>Agroecosystems: Energetic Efficiency</i>
F1JL 35	<i>Soils and Plant Nutrition</i>
F2EC 35	<i>Livestock Nutrition</i>
F1Y7 35	<i>Farm Manures, Wastes and the Environment</i>
F1Y9 34	<i>Grass and Fodder Crop Production</i>

General information for centres (cont)

Core Skills: There are no Core Skills embedded in this Graded Unit specification.

Assessment: This examination-based Graded Unit is a closed-book examination of 3 hours duration.

Administrative Information

Graded Unit code: F3R2 35

Graded Unit title: Agricultural Science: Graded Unit 3

Original date of publication: August 2007

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: Agricultural Science: Graded Unit 3

Conditions of assessment

The assessment is based on a closed-book examination lasting 3 hours.

If a candidate does not achieve a pass or if a candidate wishes to upgrade, this must be based on a significantly different examination from that given originally. A candidate's grade will be based on his/her achievement on the new assessment event using a significantly different examination, if this results in a higher grade.

The examination should be unseen and the assessment should be conducted in controlled and invigilated conditions.

At all times, the security, integrity and confidentiality of examinations must be ensured.

Instructions for designing the assessment task:

The examination should be designed to assess the candidate's critical knowledge and understanding of the topics relating to the specific aims which this Graded Unit is designed to cover. The questions and corresponding marks should be designed in accordance with the ranges indicated in the table that follows. However, the overall total mark for the examination is 100.

The format of the examination paper should be designed to meet the following requirements:

- ◆ The examination paper must be divided into three sections corresponding to the Key integrated topics in the following table
- ◆ Each section must include at least one question that involves relevant environmental issues or impacts which the candidate must attempt
- ◆ A blend of question types must be used appropriate to the level of demand
- ◆ The aggregate marks available for the question or questions in each topic area should conform to the weighting given in the following table
- ◆ Candidates must attempt all sections

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

Key topics	Level of demand	Percentage weighting for each topic
<p>Crop and soil science</p> <p>Examples of topics that might be included are: conversion of solar energy into crop products, crop productivity, grass cutting methodology, grassland management, fertiliser recommendations (nutrient movement, cycling and budgeting, symptoms of nutrient deficiency), soil water availability (for example water potential, soil moisture deficit), carbon sequestration</p>	<p>Recall and apply knowledge and understanding to provide one or more of the following: explanation, discussion, evaluation, calculation, comparison, appraisal, analysis, problem solving.</p>	35%
<p>Livestock science</p> <p>Examples of topics that might be included are: feed quality measurements, impact of grassland management and conservation technique, feed processing, livestock growth and welfare, UK livestock systems, use of by-products from biofuel industries.</p>	<p>Recall and apply knowledge and understanding to provide one or more of the following: explanation, discussion, evaluation, calculation, comparison, analysis, appraisal, problem solving.</p>	35%
<p>Production management</p> <p>Examples of topics that might be included are: intensive and extensive cropping systems, or organic and conventional cropping systems, grassland yield, drainage systems (spacing and permeability aids for instance), support energy in agriculture, animal food production systems.</p>	<p>Recall and apply knowledge and understanding to provide one or more of the following: explanation, discussion, evaluation, calculation, comparison, analysis, appraisal, problem solving.</p>	30%

The examination will be marked out of 100. Assessors will aggregate the marks achieved by the candidate to arrive at an overall mark for the examination. Assessors will then assign a grade to the candidate for this Graded Unit based on the following grade boundaries:

- ◆ A = 70% — 100%
- ◆ B = 60% — 69%
- ◆ C = 50% — 59%

To pass the examination and achieve the Graded Unit, the candidate must achieve a mark of 50% or above.

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

Guidance on grading candidates

Candidates who meet the minimum Evidence Requirements will have their achievement graded as a C (competent), 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:

Grade A	Grade C
Is a seamless, coherent piece of work or exam script which consistently:	Is a co-ordinated piece of work or exam script which:
◆ interprets and understands the question in a way that demonstrates insight and clear understanding of issues and relationships	◆ interprets and understands the question in a way that enables the candidate to meet the basic criteria required
◆ comprehensively addresses all aspects of the question	◆ provides answers which address the main issues of the question but minor elements are overlooked
◆ demonstrates a comprehensive analysis and evaluation of relevant information	◆ demonstrates analysis, evaluation and explanation of the question and other relevant information
◆ offers logically structured and coherently expressed responses, demonstrating consistent use of correct terminology	◆ provides a response which conveys understanding of relevant points
◆ is clear and well structured throughout using language and terminology of a consistently high standard in terms of level, accuracy and technical content	◆ is structured using language and terminology, although not always consistent, in terms of level, accuracy and technical content
◆ consolidates and integrates required knowledge and skills, linking concepts and ideas and relating answers explicitly to the question	◆ consolidates and integrates knowledge and skills
◆ solutions to problems are realistic and practical in terms of the scenario	◆ provides solutions to problems which are feasible
◆ convincingly argues and shows links between discussions and conclusions, demonstrating comprehensive knowledge and understanding as well as analysis and evaluation skills	◆ argues and justifies conclusions but these conclusions may lack reasoned understanding and may not link well to discussions
◆ provides evidence of possible alternative approaches and arguments as well as an understanding of different interpretations	◆ provides evidence of one approach and interpretation of solution

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

Support notes

This Unit consists of a three hour, closed-book examination, covering three key integrated topic areas. The question (or questions) associated with each key topic should be focussed on knowledge and skills that candidates should be expected to be able to readily recall, integrate and apply. The purpose of the examination is, in part, to prove the candidates' ability to integrate information gleaned from the Units that comprise the course, but also it provides the opportunity for candidates to achieve a grade for the examination that reflects the depth and scope of their knowledge and understanding.

The defined mandatory Units should preferably be scheduled for the first and second terms so that candidates have time to consolidate and deepen their knowledge and understanding by private study and background reading before the examination towards the end of the academic session.

It is recommended that candidates should have experienced an examination type assessment event during the delivery of the award so that they feel comfortable with the format. There should be discussions with candidates on examination technique which should include the timing, the significance of the verbs used in questions, the need to ascertain the scope of the question, and planning responses. Feedback on sample responses (formative assessment) will sharpen their examination techniques.

The examination should be completed under normal examination conditions. That is at a defined time advertised well in advance, in a quiet venue with effective invigilation facilities. Candidates should be provided with clear information regarding examination resits.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements

General information for candidates

This is a single credit Graded Unit (examination) at SCQF level 8.

This Graded Unit is designed to assess your ability to recall, integrate and apply the essential knowledge and understanding required to meet the principal aims of the HND Agricultural Science award. The assessment is a closed-book examination lasting three hours, held towards the end of the course and will draw together elements from the mandatory Units of this Agricultural Science programme.

The examination consists of questions in three areas related to key integrated topic areas of the above Units. These areas are:

- ◆ Crop and soil science
- ◆ Livestock science
- ◆ Production management

Each section will have the marks for the question identified and the total number of marks available is 100. Assessors mark each section of the examination paper taking into account the criteria outlined. The marks for the examination are then aggregated to arrive at an overall mark for the examination. Assessors 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%

Candidates who fail the examination and are offered a resit opportunity must undertake a substantially different question paper.