Higher National Graded Unit specification

General information for centres

This Graded Unit has been validated as part of the HND Food Science and Technology. 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: Food Science and Technology: Graded Unit 2

Graded Unit code: F8XG 35

Type of Graded Unit: Project

Assessment Instrument: Practical Assignment

Credit points and level: 2 HN credit at SCQF level 8: (16 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 National 1 to Doctorates.*

Purpose: This Graded Unit is designed to provide evidence that the candidate has achieved the following principal aims of the HND Food Science and Technology:

- enable candidates to further develop and enhance the study and research skills which will help them to become independent learners
- enable candidates to evaluate key aspects of the operation of the food industry and draw justified conclusions from their evaluation
- enable candidates to refine and extend their practical scientific and technological skills in line with industry standards
- build on their existing transferable skills to further develop them in accordance with the standards expected by employers to ensure that they are prepared to function effectively in the dynamic contemporary labour market
- provide candidates with a comprehensive overview and understanding of the technology, processes and products of the food industry and the scientific, legal and cultural factors which influence the context in which they operate

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:

General information for centres (cont)

F6VF 34	*Food Industry Principles: An Introduction*
F6VE 34	*Food Industry Practices: An Introduction*
F6VG 34	*Food Manufacturing: Processing Practices at Ambient Temperatures*
F6VJ 34	*Food Manufacturing: Processing Practices at Sub-Ambient Temperatures*
F6VH 34	*Food Manufacturing: Processing Practices at Elevated Temperatures*
F8L6 35	*Food Manufacturing: Post Manufacturing Processes within the Food Chain*
F8L8 35	*Food Quality Management*
F8L7 35	*Food Product Development Principles*
F8L3 35	*Sensory Assessment of Foods*
F6VL 34	*Microbiology of Foods 1*
F6VM 34	*Microbiology of Foods 2*
F8L9 35	*Microbiology of Foods: Food Quality and Safety*
F6VD 34	*Food Composition*
F8L5 35	*Food Composition: Raw Materials*
F6VC 34	*Food Analysis*
F8L4 35	*Food Analysis and Nutritional Labelling*
F4TL 34	*Food Hygiene Intermediate*
F6VK 34	*Legislation and the Food Industry*

Core Skills: There are opportunities to develop the Core Skills components listed below in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Problem Solving (Critical Thinking) at SCQF level 6,
Problem Solving (Planning and Organising) at SCQF level 6
Problem Solving (Reviewing and Evaluating) at SCQF level 6

Communication (Oral Communication) at SCQF level 6
Written Communication (Reading) at SCQF level 6
Written Communication (Writing) at SCQF level 6

Numeracy (Using Graphical Information) at SCQF level 6
Numeracy (Using Number) at SCQF level 6

Information and Communication Technology (Accessing Information) at SCQF level 6
Information and Communication Technology (Providing/Creating Information) at SCQF level 6

Working with Others (Working Co-operatively with Others) at SCQF level 6
Working with Others (Reviewing Co-operative Contribution) at SCQF level 6

Assessment: This Graded Unit will be assessed by the use of *a Practical Assignment.* The developed **Practical Assignment** 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.

Administrative Information

Graded Unit code: F8XG 35

Graded Unit title: Food Science and Technology: Graded Unit 2

Original date of publication: August 2009

Version: 02

History of changes:

Version	Description of change	Date
03	Update to Conditions of Assessment.	27/07/18

Source: SQA

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Graded Unit specification if sourced by the Scottish Qualifications Authority can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0345 279 1000.

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

Graded Unit title: Food Science and Technology: Graded Unit 2

Conditions of assessment

The candidate should be given a date for completion of the **Practical Assignment.** 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.

Reasonable assistance is the term used by SQA to describe the difference between providing candidates with some direction to generate the required evidence for assessment and providing too much support which would compromise the integrity of the assessment. Reasonable assistance is part of all learning and teaching processes.

In relation to the assessment of Higher National Project-based Graded Units, assessors may provide advice, clarification, and guidance during the time between the distribution of the project instructions and the completion date, ie at each stage of the project.

Remediation allows an assessor to clarify candidate responses, either by requiring a written amendment or by oral questioning, where there is a minor shortfall or omission in evidence requirements. In either case, such instances must be formally noted by the assessor, either in writing or by recording, and be made available to the internal and external verifier.

In relation to Higher National Project-based Graded Units, candidates must be given the opportunity for remediation at each stage of the project.

The evidence for a Higher National Project-based Graded Unit is generated over time and involves three distinct stages, each of which has to be achieved before the next is undertaken. This means that any reassessment of stages must be undertaken before proceeding to the next stage. The overall grade is derived from the total number of marks *across all* sections, and should reflect the ability of the candidate to work autonomously and the amount of support required. In relation to Higher National Project-based Graded Units, candidates who have failed any stage of the project and have been unable to provide the necessary evidence through remediation must be given the opportunity for reassessment of that stage.

Any candidate who has failed their graded unit or wishes to upgrade their award must be given a reassessment opportunity, or in exceptional circumstances, two reassessment opportunities. In the case of project-based graded units, this must be done using a substantially different project.

The final grading given must reflect the quality of the candidate's evidence at the time of the completion of the graded unit. Candidates must be awarded the highest grade achieved — whether through first submission or through any reassessment, remediation, and/or reasonable assistance provided.

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

Instructions for designing the assessment task

The assessment task is a project. The project is an investigation into the processing of a food product or products. 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

Project brief

The underlying purpose of the practical assignment is to provide candidates with an opportunity to undertake a project to demonstrate that they possess scientific and technological skills appropriate to the level of the award and which are directly relevant to the contemporary food industry.

Candidates will be required to choose a project which enables them to propose, develop and test a new food product. The output will be a final manufacturing specification for the new food product. The project should enable candidates to carry out practical work, to apply scientific principles and to draw conclusions. In some cases, depending on the choice of project, candidates may be able to make recommendations but this is not a necessary requirement.

The project will involve candidates in the manufacture of different versions of the proposed new product and in carrying out associated quality analysis. They will scale up the final recipe and conduct appropriate sensory, microbiological and chemical analyses of the proposed new product.

Candidates should select a project which covers material taken from at least five of the mandatory Units for this Group Award. The project may also make use of material from optional Units, provided all the Units involved are part of the programme of study followed by the candidate for this Group Award. When choosing a project, candidates should make sure that it will be sufficient basis to meet all the requirements of this Graded Unit.

Candidates will be required to negotiate and develop a brief for their project. Where candidates are in employment, this could be a live industry brief. Briefs developed by candidates should enable them to cover the following stages:

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

Stage 1: Planning

As part of this stage, candidates will be required to:

1 set objectives for the project
2 give reasons to justify their choice of project
3 identify sources of information for the project [this can include technical, scientific and market information]
4 identify the practical activities required to complete the project [this should include details of the intended manufacturing activities, quality analyses and of other tests to be undertaken]
5 prepare a timetable for the completion of the project

Stage 2: Developing

During this stage, candidates will be expected to:

1 gather relevant information from the sources identified in the planning stage
2 carry out the manufacturing activity associated with the project, including relevant quality analysis, in a safe and hygienic manner [this would involve using processing plant equipment to manufacture different versions of the product in an attempt to produce improvements]
3 conduct suitable microbiological, chemical and sensory tests of the proposed new product
4 present the proposals for a new product in a suitable format [this would include preparing a manufacturing specification for the new product which is based on information gathered from manufacturing different versions of the new product and takes into account the results of the tests and analyses carried out on it]
5 monitor the actual progress of the plan against the timetable and take any necessary corrective action

Stage 3: Evaluating

For this stage, candidates will be expected to:

1 comment on the extent to which the objectives of the project have been met
2 evaluate the proposals for the new product [this would include reference to the final manufacturing specification and to decisions taken during the developing stage]
3 identify and justify potential further developments of the new product
4 comment on the strengths and weaknesses of the project
5 draw some lessons for future projects that they may undertake

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 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.

Grade A	Grade C
Is a seamless, coherent piece of work which:	Is a co-ordinated piece of work which:
♦ has sufficient evidence for the three essential phases of the project, is produced to a high standard, and is quite clearly inter-related	♦ has sufficient evidence for the three essential phases of the project and is produced to an adequate standard
♦ is highly focused and relevant to the tasks associated with the project brief	♦ is focused and relevant to the tasks associated with the project brief
♦ demonstrates high levels of relevant skills	♦ demonstrates adequate levels of relevant skills
♦ is clear and well structured throughout and maintains a high level of accuracy and technical content	♦ is satisfactorily structured and adequate in terms of accuracy and technical content
♦ effectively consolidates and integrates knowledge and skills from different units in HND Food Science and Technology	♦ consolidates and integrates knowledge and skills from Units in HND Food Science and Technology but this may lack some continuity and consistency
♦ carries out practical manufacturing work to a high standard of safety and hygiene and in a manner which efficiently and effectively contributes to the refining and developing the proposed new product	♦ carries out practical work safely and hygienically in a way that helps to develop the proposed new product
♦ makes a carefully considered choice of a comprehensive range of scientific and sensory tests which are fully appropriate for the proposed new product	♦ selects valid scientific and sensory tests for the new product but within a limited range
♦ gathers information from a wide range of scientific, technical and market sources and relates this in a considered and valid way to the new product development involved in the project	♦ gathers some scientific, technical and market information for the project and makes some connection between it and the new product development
♦ provides logical and coherent reasons to support points made and to justify analysis and evaluation	♦ provides reasons to support points made but this may not be done consistently and some analysis and evaluation may lack coherence

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%

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

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.

Project stage	Minimum Evidence Requirements
Stage 1 — Planning 20% of total marks	Present a plan for the project which includes: ♦ objectives for the project ♦ reasons to justify the choice of project ♦ sources of information for the project [this can include technical, scientific and market information] ♦ the practical activities required to complete the project [this should include details of the intended manufacturing activities, quality analyses and of other tests to be undertaken] ♦ a timetable for the completion of the project **Additional guidance on grading** This section of the practical assignment will be assessed by the presentation of evidence for each of the five aspects listed above. Candidates may present this evidence in any manner which they consider appropriate. They may include charts or diagrams if they wish to do so but these are not necessary. Tutors may ask questions of candidates to elucidate further evidence and allow the candidate to provide further explanation [if this is done a record of the questions and responses should be kept]. This section is worth 20 marks. Guidance on allocation of the marks is given in the support notes for this Unit. *The candidate must achieve all of the minimum evidence specified above in order to pass the Planning stage. This can be demonstrated by presenting evidence covering all five aspects of the Planning stage and achieving a mark of at least 10/20.*

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

Project stage	Minimum Evidence Requirements
Stage 2 — Developing 50% of total marks	Present evidence of the developing stage of the project which will cover: ♦ gathering relevant information from the sources identified in the planning stage ♦ carrying out the manufacturing activity associated with the project, including relevant quality analysis, in a safe and hygienic manner [this would involve using processing plant equipment to manufacture different versions of the product in an attempt to produce improvements] ♦ conducting suitable microbiological, chemical and sensory tests of the proposed new product ♦ presenting the proposals for the new product in a suitable format [this would include a manufacturing specification for the new product which is based on information gathered from manufacturing different versions of the new product and takes into account the results of the tests and analyses carried out on it] ♦ monitoring the actual progress of the project against the timetable and take any necessary corrective action **Additional guidance on grading** This section of the practical assignment will be assessed by the presentation of evidence for each of the five aspects listed above. Candidates may present this evidence in any manner which they consider appropriate. They may include charts, tables or diagrams if they wish to do so but these are not necessary. Tutors may ask questions of candidates to elucidate further evidence and allow the candidate to provide further explanation [if this is done a record of the questions and responses should be kept]. This section is worth 50 marks. Guidance on allocation of the marks is given in the support notes for this Unit.
	The candidate must achieve all of the minimum evidence specified above in order to pass the Developing stage. This can be demonstrated by presenting evidence covering all five aspects of the Planning stage and achieving a mark of at least 25/50.

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

Project stage	Minimum Evidence Requirements
Stage 3 — Evaluating 30% of total marks	Present evidence of the evaluating stage of the project which will cover: ♦ extent to which the objectives of the project have been met ♦ proposals for the new product ♦ potential further developments of the new product ♦ strengths and weaknesses of the project ♦ lessons for future projects that they may undertake **Additional guidance on grading** This section of the practical assignment will be assessed by the presentation of evidence for each of the five aspects listed above. Candidates may present this evidence in any manner which they consider appropriate. They may include charts or diagrams if they wish to do so but these are not necessary. Tutors may ask questions of candidates to elucidate further evidence and allow the candidate to provide further explanation [if this is done a record of the questions and responses should be kept]. This section is worth 30 marks. Guidance on allocation of the marks is given in the support notes for this Unit. *The candidate must achieve all of the minimum evidence specified above in order to pass the Evaluating stage. This can be demonstrated by presenting evidence covering all three aspects of the Evaluating stage and achieving a mark of at least 15/30.*

Support notes

Candidates will negotiate with their tutor on the type of food product which they wish to develop. For candidates in employment, this may be a genuine industrial product.

There is scope for candidates to work in pairs, although if this approach is adopted each candidate must present their work separately and suitable procedures should be used to ensure that the work submitted by each candidate is authentic and attributable solely to that candidate. Working in pairs (or in teams), for example, may help candidates to carry out a greater number and range of practical activities such as sensory tests.

This Graded Unit is based on the mandatory Units in the HND Food Science and Technology. It should be attempted, therefore, when candidates have completed as many of these Units as possible as they provide candidates with the skills, knowledge and understanding required for this Graded Unit.

Earlier in the academic year, candidates will complete the Unit Food Manufacturing: Food Product Development Principles, during which they will carry out a feasibility project, which should ideally be related to the product being developed in this project.

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

Ideas for possible projects include production/development of:

- low-fat 'creamed style' canned soup
- quick frozen fish fingers from a sustainable source
- freeze dried vegetables and incorporation into a product with cous cous and spices
- smoked meat or fish and incorporation into a chilled pate
- cottage cheese with development of a novel flavoured product
- bakery product packaged using Modified Atmosphere Packaging (MAP)

Although the candidates will have an initial timeplan for their project, it is the nature of food product development that each practical exercise may require that the project moves in a slightly different direction. What is important is that the candidate must justify decisions, based on sound evidence. Centres may wish to have regular review meetings with candidates to check on their knowledge and understanding of the project. Where candidates work in pairs or in teams, these regular review meetings can be used to ensure that all candidates are carrying out a fair share of both the work and the decision making.

The developing stage involves a range of practical work including manufacturing activity and quality analyses as well as undertaking chemical, microbiological and sensory tests. Candidates should be encouraged to keep a logbook of all activities which could be discussed with the tutor during the planning and developing stages and would also provide a valuable source of reference for the evaluating stage. Depending on their choice of new food product, candidates may have to work with technical and purchasing staff and to work around other projects which might require the use of the same piece of equipment. Tutors should make sure that candidates follow appropriate safety and hygiene procedures when undertaking all types of practical activity, whether they are using processing plant equipment or undertaking laboratory work.

On completion of the practical activity candidates would present evidence of the developing stage. Thereafter, they should evaluate their work throughout the project as a whole and present evidence to demonstrate that they have done this.

Candidates may present evidence in a number of different ways. They could prepare a report or make use of presentation software.

Guidance on Awarding Marks

The following gives guidance on how to apportion marks for each of the stages of the practical assignment. When deciding what marks to award, assessors should take into account the grading criteria and the requirements of the generic level descriptor for SCQF level 8.

Stage 1 Planning

This section is worth 20 marks which should be allocated as set out below.

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

Up to 3 marks for the specific objectives for the project — marks should be awarded on the basis of:

- the extent to which the objectives are consistent with the material in Units in the HND Food Science and Technology
- the extent to which the objectives are relevant to developing a new food product
- the extent to which the objectives are clear, specific and achievable within the expected time frame

Up to 3 marks for reasons to justify the choice of project — marks should be awarded on the basis of:

- the clarity and comprehensibility of the outline of the project [maximum of 1 mark]
- the extent to which the reasons are convincing including the clarity with which they are presented
- the degree of initiative and/or originality shown by the candidate in selecting the project and making arrangements for it [eg with respect to the new product being proposed]

Up to 4 marks for sources of technical, scientific and market information for the project — marks should be awarded on the basis of:

- the range of sources identified
- the complexity of the technical, scientific and market information involved
- the degree of initiative and originality shown by the candidate in identifying sources
- extent to which non-routine sources are used

Up to 6 marks for the description of the practical activities required to complete the project — marks should be awarded on the basis of:

- the suitability of the manufacturing techniques and quality analyses for the proposed new product
- the extent to which chemical and microbiological tests are appropriate for the proposed new product
- the extent to which sensory analysis is appropriate for the proposed new product
- the extent to which the suggested practical activities as a whole are feasible and within the capabilities which could be expected of a candidate on HND Food Science and Technology
- degree of originality shown by the candidate in choosing suitable manufacturing techniques, analyses and tests

Up to 4 marks for a timetable for the completion of the activity — marks should be awarded on the basis of:

- the inclusion of a final completion date and significant milestones to reaching this date
- how realistic the timetable is likely to be with respect to factors such as the availability of resources for practical work, other commitments which the candidate might have etc
- identification of resources (including time) needed to carry out the plan
- the extent to which the timetable is consistent with the objectives of the project

Stage 2 Developing

This section is worth 50 marks which should be allocated as set out below.

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

Up to 7 marks for gathering relevant technical, scientific and market information about the project from the sources identified in the planning stage — marks should be awarded on the basis of:

- the accuracy and clarity of the information gathered
- the relevance of the information to the project
- the range of different types of technical, scientific and market information gathered
- the range of sources actually used by the candidate to gather technical, scientific and market information
- the extent to which the candidate was required to use her/his initiative in gathering technical, scientific and market information

Up to 14 marks for carrying out the manufacturing activity associated with the project — marks should be awarded on the basis of:

- the number and relevance of manufacturing activities carried out [this is likely to involve the use of pilot plant equipment]
- the adjustments made to manufacturing activities to enable the development of the new product to be improved
- the validity of the quality analyses carried out as part of the development of the new product
- the extent to which the results of the quality analyses were reflected during the carrying out the manufacturing activity
- extent to which the manufacturing work was conducted in a safe and hygienic manner
- extent to which practical work was conducted in a manner which made effective and economical use of resources

Up to 14 marks for carrying out the microbiological, chemical and sensory tests associated with the proposed new product — marks should be awarded on the basis of:

- number and relevance of tests carried out
- the use made of the results of the tests to refine and develop the new product proposal
- the justification for the selection of tests used and to support the use made of the results
- extent to which the tests were conducted in a safe and hygienic manner
- extent to which the tests were conducted in a manner which made effective and economical use of resources

Up to 8 marks for presenting the proposal for new product development in a suitable format [including preparing the manufacturing specification for the proposed new product] — marks should be awarded on the basis of:

- the extent to which the proposals are explicitly based on the results of the manufacturing activities and quality analyses undertaken
- the extent to which the proposals are explicitly based on the results of the chemical, microbiological and sensory tests undertaken
- the scaling up of the recipe
- the extent to which the manufacturing specification is consistent with current industry standards
- clarity and accuracy of the presentation of the proposals

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

Up to 7 marks for monitoring the actual progress of the project against the timetable and taking any necessary corrective action — marks should be awarded on the basis of:

- the effectiveness of the methods used by the candidate to check progress of the plan against the timetable [candidates could use a log book or other method of recording progress]
- the extent to which methods of corrective action were suitable in the circumstances [or why corrective action proved to be unnecessary]
- the quality and validity of reasons given to support points made about monitoring progress and taking any corrective action
- clarity and accuracy of the presentation of the effectiveness of monitoring and any corrective action

Stage 3 Evaluating

This section is worth 30 marks which should be allocated as set out below.

Up to 7 marks for an assessment of the extent to which the objectives of the project have been met — marks should be awarded on the basis of:

- comprehensive coverage of all objectives
- making explicit connections between how well the objectives were met and the planning and implementing stages of the project
- reflection on the suitability of the objectives for the project
- the strength and validity of the reasons given to support points made
- the use of any feedback from others (eg tutors) on the objectives of the project

Up to 9 marks for an evaluation of the proposals for the new product — marks should be awarded on the basis of:

- reasons to justify the choice of manufacturing specification and the extent to which the reasons are explicitly linked to the work undertaken during the developing stage
- reasons to justify the ways in which the proposals take account of the results of the analyses and tests undertaken during the developing stage
- an assessment of the commercial viability of the proposed new product — this should refer to supply and demand factors

Up to 4 marks for identifying and justifying potential further developments of the new product — marks should be awarded on the basis of:

- the extent to which potential developments are explicitly based on the work in the developing stage
- the extent to which potential developments are likely to be commercially viable with respect to supply and demand factors

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

Up to 6 marks for an explanation strengths and weaknesses — marks should be awarded on the basis of:

- making reference to both the planning and developing stages when explaining strengths and weaknesses
- identification of both strengths and weaknesses [which could, if desired, be expressed in terms of what went well and what did not go as well as expected]
- extent to which the candidate adopts a realistic attitude to identifying strengths and weaknesses
- the strength and validity of the reasons given to support points made
- the use of feedback from others (eg tutors) in identifying strengths and weaknesses

Up to 4 marks for lessons for future projects that the candidate may undertake [eg after taking up employment in the food industry] — marks should be awarded on the basis of:

- making reference to both the planning and developing stages when drawing lessons
- extent to which the lessons follow from strengths and weaknesses of the project as identified by the candidate
- the strength and validity of the reasons given to support points made
- the use of feedback from others (eg tutors) on this project when drawing lessons for the future

Equality and inclusion

This unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

General information for candidates

For this Graded Unit you will be expected to carry out a project to propose the development of a new food product. The project will involve you in the manufacture of different versions of the proposed new product using pilot plant equipment and in carrying out associated analysis. You will scale up the final recipe and conduct appropriate sensory, microbiological and chemical analyses of the proposed new product.

You will be able to discuss possible new products with your tutors but it will be up to you to choose a suitable new product for your project.

You will be required to negotiate and develop a brief for your project. If you are in employment, this could be a live industry brief.

The brief you develop should enable you to follow three stages for your project — planning, developing and evaluating.

During the planning stage (worth 20 marks) you will be expected to do the following:

- set objectives for your project
- give reasons to justify your choice of project
- identify sources of information for the project [this can include technical, scientific and market information]
- identify the practical activities you will have to undertake to complete the project [this could cover details of the intended manufacturing activities, quality analyses and of other tests to be undertaken]
- prepare a timetable for the completion of the project

You have to pass the planning stage by gaining 10 marks out of 20 before you can move on to the other two stages.

In the developing stage (worth 50 marks), you will:

- gather relevant information from the sources identified in the planning stage
- carry out the manufacturing activity associated with the project, including relevant analysis, in a safe and hygienic manner [this would involve using processing plant equipment to manufacture different versions of the product in an attempt to produce improvements]
- conduct suitable microbiological, chemical and sensory tests of the proposed new product
- present the proposals for a new product in a suitable format [this would include preparing a manufacturing specification for the new product which is based on information gathered from manufacturing different versions of the new product and takes into account the results of the tests and analyses carried out on it
- monitor the actual progress of the plan against the timetable and take any necessary corrective action

General information for candidates

The evaluating stage (worth 20 marks) requires you to think about how your project has worked out and to:

- comment on the extent to which the objectives of your project have been met
- evaluate the proposals for the new product you have proposed [this would include reference to the final manufacturing specification and to decisions taken during the developing stage]
- identify and justify potential further developments of the new product you have proposed
- comment on the strengths and weaknesses of the project
- draw some lessons for future projects that you may undertake, perhaps when you take up employment in the food industry

You will present evidence for each of the three stages. There are a number of ways in which you could do this but your tutor will advise you on what is a suitable method in your case. Marks will be awarded for the evidence you present.

The project will be marked out of 100. To pass the Graded Unit you must achieve 50% of the total marks and gain at least 50% of the marks for each of the 3 stages of the project. You will be awarded a grade for your project.

- If you achieve an overall mark of 50-59% you will be awarded a Grade C.
- If you achieve an overall mark of 60-60% you will be awarded a Grade B.
- If you achieve an overall mark of 70% or higher you will be awarded a Grade A.