



**HOME ECONOMICS:
HEALTH AND FOOD TECHNOLOGY**
Intermediate 2

Eighth edition – published August 2011



**NOTE OF CHANGES TO ARRANGEMENTS
EIGHTH EDITION PUBLISHED AUGUST 2011**

COURSE TITLE Home Economics: Health and Food Technology
(Intermediate 2)

COURSE NUMBER: C118 11

National Course Specification

- Roles and responsibilities for Environment, Food And Rural Affairs(DEFRA) amended
- Roles and responsibilities of Meat Hygiene Service (MHS) deleted.
- Roles and responsibilities of Environmental Health Department (EHD) amended.
- SEERAD deleted.
- Roles and responsibilities of Trading Standards Department (TSD) updated.
- Trade Description Act 1968 replaced with Consumer Protection from Unfair Trading Regulations 2008(CPRs)
- Food Hygiene Regulations 2005- replaced with the General Food Regulations 2004,The Food Hygiene Regulations 2006, Food Labelling Regulations 1996.
- Food Safety Act 1990 Updated.
- Web addresses for Course content updated

National Unit Specification: No changes.



National Course Specification

HOME ECONOMICS: HEALTH AND FOOD TECHNOLOGY (INTERMEDIATE 2)

COURSE NUMBER C118 11

COURSE STRUCTURE

This course has three mandatory Units, as follows:

D268 11	<i>Health and Food Technology: Management of Practical Activities (Int 2)</i>	<i>1 credit (40 hours)</i>
D269 11	<i>Health and Food Technology: Consumer Studies (Int 2)</i>	<i>1 credit (40 hours)</i>
D270 11	<i>Health and Food Technology: Product Development (Int 2)</i>	<i>1 credit (40 hours)</i>

In common with all Courses, this Course includes 40 hours over and above the 120 hours for the component Units. This may be used for induction, extending the range of learning and teaching approaches, support, consolidation, integration of learning and preparation for external assessment. This time is an important element of the Course and advice on its use is included in the Course details.

It is recommended that units be taught concurrently and advice on this can be found in the section on 'Approaches to Learning and Teaching'.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates will normally be expected to have attained one of the following:

- Standard Grade Home Economics at General level
- a Course or its component Units at Intermediate 1 in Home Economics, or equivalent

The course is also suitable for 'new starts' and adult returners with appropriate prior experience.

Administrative Information

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Additional copies of this course specification (including unit specifications) can be purchased from the Scottish Qualifications Authority for £7.50. **Note:** Unit specifications can be purchased individually for £2.50 (minimum order £5).

National Course Specification: general information (cont)

COURSE Home Economics: Health and Food Technology
(Intermediate 2)

CORE SKILLS

Core skills for this qualification remain subject to confirmation and details will be available at a later date.

Additional information about core skills is published in the *Catalogue of Core Skills in National Qualifications* (SQA, 2001).

National Course Specification: course details

COURSE Home Economics: Health and Food Technology
(Intermediate 2)

RATIONALE

Home Economics is concerned with using and managing resources for the benefit of individuals, the family and society. The Course aims to develop candidates' personal effectiveness in using and managing resources in the context of Health and Food Technology, and adding to the dimensions of self, family and community a range of challenging experiences relating to the food industry. These experiences will enhance their future opportunity for further study or employment.

Health and Food Technology involves the study of a specialist area of knowledge and the development of a range of skills and abilities. These can be defined as: cognitive; technological; scientific; creative; aesthetic and social; and those relating to management. The disciplined study of the interrelationships of these is one of the major contributions the subject makes to the curriculum. For example, in planning and making a range of food products to meet a specified need, candidates will be required to integrate knowledge, understanding and skills in a number of ways:

- linking knowledge of the properties and nutritional value of food, with an understanding of people's sensory and physical needs
- showing understanding of how key constraints, such as time, effort, skill level and available resources, impact on the way in which practical activities are planned and carried out
- showing imagination and creativity in the preparation and production of food to an appropriate standard and evaluating both process and product

The acquisition and the development of skills are integrated through delivery of the Course content within the component Units.

Study of Health and Food Technology enables candidates to focus on the physical, chemical, nutritional, biological and sensory properties of food, and on ways in which these properties can be manipulated when manufacturers design and make food products. These products have a specified shelf life and meet the needs of many categories of consumer. Some focus is also placed on food preparation for immediate consumption, where the consumer's cultural, social, and nutritional needs and economic status are known.

The requirement to identify and respond to needs promotes the development of technological capability. In its report, *A Framework for Technology Education in Scottish Schools: A Statement of Position*, the Scottish Consultative Council on the Curriculum (Scottish CCC, 1996) states:

‘A broadly-based technological component in the curriculum does do much to “privilege the practical” and to redress the imbalance in many young people's educational experience between the acquisition of knowledge, skills and attitudes, and their application to meeting and solving practical problems. Including technology in the curriculum improves the status and attractiveness of the practical and commercial activities which are the heart of industry and business, and helps all young people to recognise the personal satisfaction and enjoyment that can be derived from active participation.’

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology (Intermediate 2)

Home Economics in the context of Health and Food Technology provides for the development of the four aspects of technological capability. For example, candidates develop: technological perspective by showing some appreciation of the factors which contribute to the success of a well designed product; technological confidence by questioning their own designs and products and by becoming proficient in applying knowledge and skills to solve problems; technological sensitivity by demonstrating some appreciation that their solutions to technological problems have consequences for others and the environment; technological creativity by solving problems which require the use of a range of resources, including specialist craft skills and the evaluation of the solution.

Specialist craft skills and management skills are fundamental to Health and Food Technology. The craft skills include the process and manipulative skills concerned with:

- food preparation
- food production

and are used to illustrate understanding of meal planning for a range of situations and needs.

Management skills are those required for the effective use of time and resources in the production of products and systems. Importantly, these skills also include the ability to work effectively, both independently and as a member or leader of a team. These skills enable candidates to participate effectively in technological activities.

“The publication of the *Scottish Diet Action Plan in 1996* highlighted that "home economics programmes have a particularly vital role to play in promoting healthy eating among young people and in the prevention of diet-related disease". While the need for practical meal making and food shopping skills is highlighted once more in *Eating for Health: Meeting the Challenge* (Scottish Executive, 2004). Health and Food Technology provides an opportunity to develop candidates' practical food skills as well as promoting an awareness of diet-related health issues."

An important part of Health and Food Technology is to develop standards in relation to a safe working environment. For example, candidates are encouraged to take responsibility for health and safety in the use of products and equipment which carry potential risks. This is particularly relevant if considering the possibilities of food contamination and, consequently, food poisoning. These standards are also applied in industry and are, therefore, transferable.

The Course will enable candidates to develop a range of study skills to facilitate and encourage independent learning culminating in a technological project. It also prepares them for further study and employment opportunities.

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology
(Intermediate 2)

AIMS

- 1 To provide opportunities for the acquisition of specialist knowledge and understanding of the factors which influence some of the choices and decisions made by individuals and families* and society.
 - 2 To acquire skills of investigation and evaluation through the study of materials and resources necessary for the identification of, and response to, the physical and social needs of individuals and families*.
 - 3 To acquire the management skills necessary for the effective use of materials and resources, and for the application of these skills.
 - 4 To offer opportunities to use specialist craft skills for creative purposes as well as for investigatory and problem solving activities.
 - 5 To offer opportunities for the achievement of technological capability in the four aspects of technological perspective, confidence, sensitivity and creativity.
 - 6 To offer opportunities for the development of personal and interpersonal skills in the areas of initiative, responsibility, co-operation, and adaptability and to encourage a positive attitude to independent learning.
 - 7 To foster vocational links and an awareness of the food industry.
- * Families can be defined as a unit made up more than one person, contributing to the well-being of its individual members.

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Management of Practical Activities

CONTENT	ELABORATION
Need for a balanced diet	definitions of balanced diet
Causes of malnutrition	under-nutrition over-nutrition
Functions and sources of nutrients	protein - HBV/LBV/complementary proteins fats - saturated/unsaturated fats/Omega 3 carbohydrates - sugars/starch/intrinsic/extrinsic/NME sugars vitamins - A, B complex, C, D, E minerals - calcium, phosphorous, iron, sodium.
Functions and sources of:	water fibre(dietary)/NSP
Factors which assist calcium absorption:	vitamin D
Factors which hinder calcium absorption:	lack of vitamin D phytic acid fibre(dietary)/NSP
Factors which assist iron absorption:	vitamin C
Factors which hinder iron absorption:	lack of vitamin C fibre(dietary)/NSP phytic acid

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Management of Practical Activities

CONTENT	ELABORATION
Inter-relationship of:	calcium, phosphorous and vitamin D iron, vitamin C and folic acid iron, fibre(dietary)/ NSP and phytic acid vitamin B complex and carbohydrates water and fibre(dietary)/NSP the role of anti-oxidants
Effects of storage on nutrients: Effects of preparation on nutrients: Effects of cooking on nutrients:	deterioration and rancidity of fats when exposed to air deterioration and oxidation of vitamins suitable storage methods to reduce loss of nutrients loss of vitamin B complex in milling process preparation of fats to assist digestion effects of preparation methods on vitamin C coagulation of protein effects of dry heat on starch - dextrinisation effects of moist heat on starch/solubility effects of heat on sugar - caramelisation effects of heat and water on vitamins B complex and C

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Management of Practical Activities

CONTENT	ELABORATION
Prevention of dietary diseases	anaemia coronary heart disease dental caries diverticulitis hypertension obesity osteoporosis
The use of dietary reference values • The use of dietary reference values & an awareness of their dietary needs	low reference nutrient intake estimated average requirements reference nutrient intake safe intake relating to the intake of energy, protein, fats, minerals; calcium, phosphorous, iron and sodium, starches and sugars, NSP, vitamins A, B complex, folic acid, C, D, E specified groups: <ul style="list-style-type: none"> • infants/young children • teenagers • adults • elderly linking to: age, physical activity (PAL), gender, basal metabolism, special circumstances : <ul style="list-style-type: none"> • pregnancy and lactation • convalescents • weight reduction • vegetarians. (for assessment purposes the reference values will be provided)

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Consumer Studies

CONTENT	ELABORATION
Factors which influence consumer choice of food:	advertising/marketing/promotional techniques available income cultural and religious influences lifestyle nutritional knowledge environmental issues: organic produce, energy saving, cruelty free, packaging to reduce pollution ³ food intolerance ⁴ : <ul style="list-style-type: none"> • deficiencies • allergies foreign travel geographical location/access to shops health peer pressure personal taste preparation and cooking equipment available preparation and cooking skills priorities range of retail outlets selling food shift patterns/working hours technological innovations: <ul style="list-style-type: none"> • shopping - online shopping time available for preparation/cooking/eating

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Consumer Studies

CONTENT	ELABORATION
The impact of technological innovations on consumer choice of food preparation and cooking equipment	Innovations in equipment to make food preparation and cooking easier and/or quicker <u>White goods</u> <ul style="list-style-type: none"> • cookers • microwaves <u>Brown goods</u> <ul style="list-style-type: none"> • blenders • bread-makers • health grills • processors • steamers
Technological developments which affect a consumer's choice of food	food additives functional foods ⁵ myco-proteins packaging <ul style="list-style-type: none"> • reasons for packaging • types of packaging
Current statutory food labelling requirements	relating to: information on food labels

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Consumer Studies

CONTENT	ELABORATION
Role and responsibilities of Food Standard Agency (FSA)	<ul style="list-style-type: none"> • protection of public health in relation to food hygiene and food safety • approval of meat plants and policy and legislation relating to meat hygiene and TSEs • regulator for novel and genetically modified foods • policy and legislation relating to animal feedingstuffs • licensing and inspection of food irradiation facilities • monitoring the use of food additives • policy, legislation and guidance on food labelling • advice about the nutrient content of foods and dietary issues • controls of composition and sale of natural mineral water, spring water, bottled water
Roles and responsibilities of Environmental Health Department (EHD)	<ul style="list-style-type: none"> • Enter premises at any reasonable time to carry out food safety duties • Inspection of premises on risk based frequency (vast majority of visits unannounced) • Provide guidance and advice • Investigate food complaints • Investigate food poisoning • Provide Inspection Reports a every visit to food premises • Serve Notices such as Hygiene Improvement notices • Close food premises which are an imminent risk to health (Hygiene Emergency Prohibition Notices/ Voluntary Closure Agreements) • Detain or seize unfit food • Take samples of food • Instigate legal proceedings by making reports to the Procurator Fiscal
Role and responsibility of Trading Standards Department (TSD)	<ul style="list-style-type: none"> • Trading Standards Department/ Consumer Protection department is a local authority service. • The role is to enforce consumer protection legislation in order to maintain a safe and fair trading environment for consumers and traders in the local Council area. A list of

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Consumer Studies

Role and responsibility of Trading Standards Department (TSD)(cont)	<ul style="list-style-type: none">• legislation is enforced by Trading Standards can be viewed on the Trading Standards website.• Trading Standards serve as an information service for other agencies, such as the Office of Fair Trading and for this purpose information is held about unfair trading practices.• Enforcing Consumer Protection from Unfair Trading Regulations 2008
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National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Consumer Studies

CONTENT	ELABORATION
Consumer Protection from Unfair Trading Regulations 2008 (CPR's)	<p>These regulations have replaced the Consumer protection Act and the Trade Description Act. The regulations fall into four categories of Unfair practices:</p> <ul style="list-style-type: none"> • Unfair commercial practices • Misleading actions and omissions • Aggressive practices • 31 specific named practices
Food Safety Act 1990	<p>As a result of EU regulations, many of the food safety provisions included in the Food Safety Act 1990 are no longer applicable. The Act is now primarily concerned with food standards. This includes:</p> <ul style="list-style-type: none"> • Rendering food injurious to health (including the cumulative effect of foods consumed over a long period). • Selling food which is not of the nature (different kind or variety) or substance (not containing proper ingredients or containing foreign body) or quality (inferior eg stale bread) demanded by the purchaser. • Selling or displaying for sale food that is falsely described or labeled. <p>The Act includes a defence of due diligence if a person can prove that they took all reasonable precautions to the offence. In the case of a retailer it may be a defense to prove that the offence was due to the fault of another person and that they carried out all reasonable checks or it was reasonable to rely on checks by the supplier.</p>

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Consumer Studies

CONTENT	ELABORATION
The General Food Regulations 2004	<p>This Regulation covers the general principles of food law and procedures in matters of food safety. It includes:-</p> <ul style="list-style-type: none"> • Prohibition of food being placed on the market if unsafe i.e. unfit for human consumption or injurious to health. If part of a batch is unfit, it is assumed all food in the batch is affected. • Labelling, advertising and presentation of food must not mislead consumers. • Operations must establish traceability systems for food for all stages of production, processing and distribution. • If operator has reason to believe the food is unsafe, then they must immediately withdraw it from the market and inform the competent authority
The Food Hygiene (Scotland) Regulations 2006	<p>Food Business Operators (FBOs) must implement a food safety management system (FSMS) based on the following HACCP principles -</p> <ol style="list-style-type: none"> a) identify hazards b) identify Critical Control points c) establish critical limits d) implement effective monitoring procedures e) establish corrective actions when CCP is out of control f) establish procedures to check that the HACCP system work effectively g) establish record keeping and review of procedure <p>FBOs must register with the Environmental Health Department</p>

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Consumer Studies

Sale and Supply of Goods Act 1994	There is a contract of sale between the seller and the buyer. Goods must be of a 'satisfactory quality' Goods must 'fit the description given' Goods must 'be fit for their purpose' as made known to the seller Consumers have a reasonable period of time to accept the goods or reject them.
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National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Product Development

CONTENT	ELABORATION
The principles of design:	function, aesthetics, safety, hygiene, quality, durability
The role raw materials play in the development of products	addition of colour, addition of flavour, addition of nutritional value - (fortification), addition of texture, bulking
Properties of ingredients in food products ⁶	aerating binding caramelisation coagulating/setting gelatinising/thickening shortening
Proportions of ingredients which affect the final product	fat to flour ratio proportion of sugar proportion of liquid
Choice of ingredients to alter the nutritional content/to meet current dietary advice	practical ways of altering the nutritional content practical ways of ensuring product meets current dietary advice reduced fat ingredients/fat replacers reduced sugar ingredients/sugar substitutes vegetarian options

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Product Development

CONTENT	ELABORATION
Constraints applied by cost to food product development	examples of how manufacturers save money by: <ul style="list-style-type: none">• waste reduction• stock control• energy saving
Scales of production	one-off batch production mass/commercial production
Commercial food processes	reasons why processing takes place <u>processing methods:</u> <ul style="list-style-type: none">• chilling/cook-chill• freezing• drying• vacuum packaging• modified atmosphere packaging
Shelf life of food products	definition of terms and examples of: <ul style="list-style-type: none">• long life foods• medium life foods• short life foods

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Product Development

CONTENT	ELABORATION
Product development strategy Identifying needs and developing concepts for products	concept generation concept screening prototype production product testing information and advertising materials designed for packaging first production run marketing plan launch investigation of existing products by disassembly
Market Research	reasons why manufacturers use market research benefits of market research to manufacturer/retailer types of market research <ul style="list-style-type: none"> • direct and indirect • qualitative and quantitative

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology - Intermediate 2 Course

COURSE CONTENT

Health and Food Technology: Product Development

CONTENT	ELABORATION
Sensory testing	reasons for manufacturers carrying out sensory testing sensory tests: preference test rating test difference tests: <ul style="list-style-type: none">• paired comparison test• duo-trio test• triangle test• taste threshold test• profiling test• discrimination test conducting sensory tests to determine the effects of range and proportion of ingredients on appearance, texture, flavour, aroma, overall acceptability, quality and preference

Web addresses for Course content - Intermediate 2 - Health & Food Technology

Hungry for Success ¹	www.scotland.gov.uk/library5/education/hfs-00.asp
Royal Environmental Health Institute of Scotland ²	www.rehis.org
Packaging to prevent pollution ³	www.bioplast.org.uk www.defra.gov.uk www.firstscience.com/site/articles/sykes.asp www.packagingmagazine.co.uk www.foodanddrinkeurope.com
Food intolerance ⁴	www.foodintol.com www.bbc.co.uk/health/allergy/conditions_food.shtml
Functional foods ⁵	www.nutrition.org.uk
Properties of ingredients in food products ⁶	www.nutrition.org.uk
FSA	www.food.gov.uk www.eatwell.co.uk

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology (Int 2)

Taking Units as part of a Course has a number of advantages:

- candidates will have opportunities to develop the four aspects of technological capability in a coherent, holistic way
- candidates will have opportunities to develop management skills within a variety of situations; and to develop personal and interpersonal skills
- candidates will be encouraged to adopt a structured approach to independent learning which culminates in the production of an independent piece of work submitted for external assessment
- candidates should gain a perspective and understanding of Health and Food Technology
- a Course award indicates a candidate's ability to integrate process skills, knowledge and understanding, and apply these to more complex, or unfamiliar situations
- candidates will be required to retain knowledge and skill levels over a longer period of time

It is important that candidates wishing to obtain success in the Course, as distinct from achievement of the individual Units, should see the holistic nature of the whole Course. An integrative approach to learning is recommended and can be achieved in a variety of imaginative ways. Classroom activities chosen to deliver Course content should match the needs and abilities of the candidates and enable them to: develop and practise the skills identified in the rationale; develop the transferable skills of enquiry, investigation and evaluation; and extend their knowledge base. Such activities will prepare candidates for external assessment by enabling them to achieve at levels beyond that required to demonstrate competency for each of the Unit outcomes.

Areas of Course content from the component Units of Health and Food Technology: Management of Practical Activities, Health and Food Technology: Consumer Studies, and Health and Food Technology: Product Development can be integrated. For example, there are natural links between menu and meal planning (Health and Food Technology: Management of Practical Activities) and the impact of technological innovations on consumer choice of foods (Health and Food Technology: Consumer Studies). Candidates could be asked to consider the same problem from a number of different perspectives or in unfamiliar situations. Teachers/lecturers should make candidates aware of the integration between the knowledge and skills of the component Units.

ASSESSMENT

To gain the award of the Course, the candidate must achieve all the component Units of the Course as well as the external assessment. External assessment will provide the basis for grading attainment in the Course award.

When Units are taken as component parts of a Course, candidates will have the opportunity to demonstrate achievement beyond that required to attain each of the Unit outcomes. This attainment may, where appropriate, be recorded and used to contribute towards course estimates, and to provide evidence for appeals. Additional details are provided, where appropriate, with the exemplar assessment materials. Further information on the key principles of assessment are provided in the paper *Assessment*, published by HSDU in May 1996.

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology (Int 2)

DETAILS OF THE INSTRUMENTS FOR EXTERNAL ASSESSMENT

Course assessment will be external and will sample across the outcomes of the component Units.

Course assessment will consist of a question paper and a technological project.

The question paper will be of 1½ hours duration and total 60 marks. Short and restricted-response questions will be used. There will be an element of choice within some questions in the question paper. The paper will consist of 5 questions each worth 12 marks. All questions will have to be attempted. Question 1 will be derived from a specified area of Course content.

The question paper will assess the candidate's ability to:

- recall and use knowledge for a range of straightforward problems and situations
- draw conclusions by selecting relevant information from source material
- evaluate using defined criteria.

Candidates will be required to submit a technological project worth 50 marks. The project will enable candidates to demonstrate integration of knowledge and skills across the component Units in order to realise a solution and demonstrate technological capability. The project will be carried out within the centre. Two project briefs will be issued by the Scottish Qualifications Authority on an annual basis. One of these will be selected by the candidate and completed within 20 hours. The technological project will be wholly externally assessed. Candidates will be provided within the appropriate proforma and guidance by the Scottish Qualifications Authority.

Teacher/lecturer guidance will be provided which set out conditions and arrangements for external assessment.

The technological project will assess the candidate's ability to:

- devise and implement a strategy to provide a solution to a product brief
- manage time and resources effectively in the manufacture of products
- evaluate the process and solution.

(See Technological Project specification.)

The overall Course award will be based on the combined total marks from the question paper and the technological project.

Teachers/lecturers may offer guidance by giving:

- advice on source information, persons or establishments that may be able to help
- assistance with planning for deadlines
- advice on the suitability and practicability of the strategy produced by the candidate.

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology (Int 2)

In some cases teachers and lecturers may wish to use an assessment instrument which will serve two purposes:

- 1 to assess attainment in relation to unit outcomes;
- 2 to provide evidence towards course estimates.

The technological project is an example of this type of instrument.

GRADE DESCRIPTIONS

The descriptions below are of expected performances at Grade C and at Grade A. Assessment will be external and will sample across the outcomes of the component Units. The grade descriptions for Course assessment relate to performance criteria for internal assessment but also place additional demands on candidates by testing their ability to: integrate knowledge and skills acquired across the component Units; retain knowledge and skill levels over a longer period of time; apply knowledge and skills in more challenging ways, for example in less familiar contexts. The grade descriptions on their own are unlikely to provide a tool for making judgements. They will require to be augmented in due course by exemplar assessment materials and detailed assessment schemes.

GRADE C	GRADE A
<p>Candidates can:</p> <ul style="list-style-type: none"> • Demonstrate knowledge and understanding by: recalling and using some of the facts, concepts, terminology and principles, as defined in the content to address straightforward problems and situations providing accurate explanation, some of which is detailed. 	<p>Candidates can:</p> <ul style="list-style-type: none"> • Demonstrate knowledge and understanding by: recalling and using most of the facts, concepts, terminology and principles as defined in the content to address straightforward problems and situations providing detailed accurate explanation,
<ul style="list-style-type: none"> • Devise and implement a strategy to provide a solution to a straightforward technological problem using appropriate, familiar techniques and procedures accurately to obtain some reliable data. 	<ul style="list-style-type: none"> • Devise and implement a strategy to provide a solution to a straightforward technological problem using appropriate, familiar techniques and procedures effectively to consistently obtain some reliable data.
<ul style="list-style-type: none"> • Integrate specialist craft skills and knowledge and understanding within a planned activity demonstrating satisfactory deployment of time and resources ,to select, prepare and present product(s) 	<ul style="list-style-type: none"> • Integrate specialist craft skills and knowledge and understanding within a planned activity demonstrating highly effective deployment of time and resources ,to select, prepare and present product(s)
<ul style="list-style-type: none"> • Draw a conclusion with accurate explanation, some of which is detailed, after selecting relevant source information, taking some account of specified factors. 	<ul style="list-style-type: none"> • Draw a conclusion with detailed, accurate explanation, after selecting relevant source information, taking some account of specified factors.

- Make an evaluation of an outcome, process or solution, against defined criteria providing accurate explanation, some of which is detailed.

- Make an evaluation of an outcome, process or solution, against defined criteria providing detailed accurate explanation,

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology (Int 2)

APPROACHES TO LEARNING AND TEACHING

Approaches to learning and teaching enhance opportunities for candidates of all abilities to achieve their full potential, whether working in a whole-class, small group or supported self-study situation. It is good practice to use a variety of methods so that candidates' interest and motivation are maintained and individual preferences for different learning styles are considered. When delivering the Course content, account should be taken of the prior knowledge that candidates may have. Teachers/lecturers will need to ensure an appropriate balance between teacher-directed approaches and candidate-centred activities. For example, it may be more appropriate to use a teacher or lecturer-directed approach when introducing a new concept.

Where appropriate, arrangements should be made to ensure that there will be no artificial barriers to learning. The nature of candidates' special needs should be taken into account when planning learning activities and to provide alternative provision or support where necessary. This will ensure the inclusion of all candidates and support them in the learning process.

Knowledge and understanding of facts, terminology, concepts and principles will be developed through a process-based approach to learning, making full use of available resources. The specialist craft skills should be used as an integral part of the course for the purposes of: investigation; the manufacturing of products; and consolidation of knowledge and understanding.

Candidates will be required to develop the skills of investigation and evaluation within technological activities, using systematic application of these skills to solve practical problems or address relevant issues. Management skills should be developed through activities such as assignments, designed to involve candidates in planning, preparing and carrying out food-related tasks using time, resources and energy efficiently.

An integrated approach to learning and teaching across the component Units of Health and Food Technology: Management of Practical Activities, Health and Food Technology: Consumer Studies, and Health and Food Technology: Product Development is recommended. Potential links between outcomes of Units can be established, which will provide opportunities for candidates to develop skills and use knowledge within one activity.

The relationship between the learning experience and applications in industry should be emphasised to provide real contexts for learning and realistic problems to solve. These opportunities will increase self-esteem, confidence and motivation for candidates, and improve their insight into the needs of industry and the skills required of those entering the job market. An industrial link is an excellent way of promoting understanding of how industry works and the standards which apply, in particular the very high standards of hygiene required in food preparation and production work. This understanding can then be mirrored in classroom activity by candidates displaying a responsible attitude to health and safety. Entrepreneurial activities provide exciting and challenging opportunities for learning, and these are greatly enhanced when they are linked with industry.

It will be important to ensure from the outset that candidates are familiar with all Unit outcomes and Course grade descriptions.

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology (Int 2)

Use of the additional 40 hours

The additional 40 hours of flexible time should be integrated into the Course design for use at important stages of delivery for example:

<i>Stage</i>	<i>Explanation</i>
Candidate induction	<p>Familiarisation with the aims and design of the Course</p> <p>Familiarisation with the requirements of internal assessment for the units and external assessment of the Course</p> <p>Setting target deadlines for the Units, Course and assessment</p> <p>Presentation of work; for example, the standards expected and the importance of items to be retained for assessment</p> <p>Candidate commitment to meet the demands and deadlines of the Course</p>
Technological project	<p>Time to complete the technological project will be taken from the additional 40 hours and from time available within the component Units. For example, a number of outcomes in the component Units can be achieved when candidates undertake the technological project, thus reducing the demands and time required for internal Unit assessment.</p>
Preparation for external assessment	<p>External Course assessment will place additional demands on candidates requiring them to:</p> <ul style="list-style-type: none">• demonstrate the ability to integrate knowledge, understanding and skills acquired in component Units• retain knowledge and skill levels over a longer period of time• apply knowledge and skills in less familiar or more complex contexts

National Course Specification: course details (cont)

COURSE Home Economics: Health and Food Technology (Int 2)

<i>Stage</i>	<i>Explanation</i>
Preparation for external assessment (contd)	<p>Candidates, therefore, will require time and appropriate experiences to permit them to develop these additional skills and abilities. These experiences should include:</p> <ul style="list-style-type: none">• consolidation and revision of knowledge and skills identified in the rationale• practice in external assessment examination techniques• opportunities to achieve at levels beyond that required to demonstrate attainment for competence in each of the Unit outcomes

A Subject Guide which will be published in association with these Arrangements will provide further advice and information.

SPECIAL NEEDS

This unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative outcomes for units. For information on these, please refer to the SQA document *Guidance on Special Assessment Arrangements* (SQA, 2001).



National Unit Specification: general information

UNIT	Health and Food Technology: Management of Practical Activities (Intermediate 2)
NUMBER	D268 11
COURSE	Home Economics: Health and Food Technology (Int 2)

SUMMARY

At the end of this Unit candidates will be able to use knowledge and understanding to select appropriate resources in order to carry out a practical activity, which relates directly or indirectly to food production. The candidate will be able to use time and energy effectively in the planning and carrying out of the activity and evaluate its success.

OUTCOMES

- 1 Plan, organise and complete a practical activity which meets the needs of a given task.
- 2 Evaluate a planned practical activity.
- 3 Use knowledge and understanding of an area of study to address a problem or situation.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates would normally be expected to have attained one of the following:

- a Course or its component Units at Intermediate 1 in Home Economics
- Standard Grade Home Economics at General level, or equivalent

The unit is also suitable for 'new starts' and adult returners with appropriate prior experience.

Administrative Information

Superclass:	NE
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National Unit Specification: general information (cont)

UNIT Health and Food Technology:
Management of Practical Activities (Intermediate 2)

CREDIT VALUE

1 credit at Intermediate 2.

CORE SKILLS

This Unit gives automatic certification of the following:

Complete core skills for the Unit	None
Core skills components for the Unit	Planning and Organising Int 2 Reviewing and Organising Int 2

Additional information about core skills is published the *Catalogue of Core Skills in National Qualifications* (SQA, 2001).

National Unit Specification: statement of standards

UNIT Health and Food Technology: Management of Practical Activities (Intermediate 2)

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to the Scottish Qualifications Authority.

OUTCOME 1

Plan, organise and complete a practical activity which meets the needs of a given task.

Performance criteria

- (a) A logical sequence of work for the practical activity is planned, showing efficient management of time.
- (b) Manufacture is carried out accurately, and efficiently.
- (c) The product(s) made are presented in a condition suitable for the purpose intended.
- (d) Health and safety requirements are met.

Evidence requirements

Recorded evidence must be provided to show that each of the performance criteria has been met on one occasion. The proposed instrument of assessment is a practical exercise, which may be part of a design activity. Attainment could be recorded by the use of an observational checklist. Specific advice:

- (a) The sequence of work shows clear evidence of: time management; requisitioning of resources and equipment; sensible sequencing of the stages, taking account of preparation, cooking time and skills level; use of labour saving equipment where appropriate to make the best use of time.
- (b) Product(s) are prepared according to instructions, taking account of the correct techniques and procedures for preparation, efficient use of resources, and safe, hygienic practices. Labour-saving equipment should be used to save time.
- (c) The products are presented in the quantities planned. The products are suitable for domestic/commercial use in terms of appearance, selection of ingredients, palatability, portion size, temperature. Equipment such as food processors may assist in the preparation of food if consistency of size or quantity is important.
- (d) Equipment is used according to instructions, in a safe manner and is cleaned correctly. Appropriate clothing is worn and personal hygiene is of a high standard throughout the practical activity. Clean and tidy workstations are maintained.

National Unit Specification: statement of standards (cont)

UNIT Health and Food Technology: Management of Practical Activities (Intermediate 2)

OUTCOME 2

Evaluate a planned practical activity.

Performance criteria

- (a) The plan for the sequence of work is evaluated with concise comment against given criteria.
- (b) The products are evaluated, with some detailed explanation, for their suitability in meeting the purpose of the practical activity.

Evidence requirements

Recorded evidence must be provided to show that each of the performance criteria has been met on one occasion. The proposed instrument of assessment is a practical exercise. The candidate's comment should be recorded using a structured outline for evaluation. Oral comment must be recorded appropriately eg, on tape. Attainment should be assessed by the use of a marking schedule. Specific advice:

- (a) Comment, normally oral or written, on: the ordering of work in respect of time constraints, preparation and cooking techniques and procedures; candidates' skill level; use of equipment (if applicable). Modifications should be included with reasoning as to why these might be necessary. Modification may include: further work required; a suggested alternative plan; modifications to the product.
- (b) Comment, normally oral or written, on how the product(s) meet their intended purpose in terms of appearance, selection of ingredients, palatability, portion size or quantity, temperature.

OUTCOME 3

Use knowledge and understanding of an area of study to address a problem or situation.

Performance criteria

- (a) An accurate explanation, reflecting consideration of the problem or situation, is given.

Evidence requirements

Recorded evidence must be provided to show that the performance criterion has been met on one occasion. The proposed instrument of assessment is a question paper requiring short and restricted responses, using a closed-book approach. The questions will be derived from sampling the content of the Unit. Attainment could be assessed by the use of a marking schedule.

National Unit Specification: support notes

UNIT Health and Food Technology: Management of Practical Activities (Intermediate 2)

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

While the time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

GUIDANCE ON CONTENT AND CONTEXT FOR THIS UNIT

The content on which this Unit is based is listed in the Course specification for Home Economics: Health and Food Technology (Intermediate 2).

The Unit is set in the context of Health and Food Technology. Candidates will be required to demonstrate knowledge and understanding of the content, by using it as a focus for related practical activities. Knowledge and understanding of the content can be acquired or consolidated through practical exercises.

The context for the Unit requires candidates to understand the importance of combining several activities in a systematic way, to make effective use of time and resources for both commercial and domestic purposes/situations.

Development of planning and organisational skills and the completion of practical exercises can be integrated with the delivery of the other component units, when they are part of the Course in Health and Food Technology.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

Learning and teaching approaches for this should match the Unit outcomes. Knowledge and understanding of the content for the Unit, can be acquired or consolidated through provision of practical activities which focus on the specific area of content.

Successful learning and teaching should be the result of positive partnership between teacher/lecturer and candidate. The purpose of the Unit and the performance required to attain it, should be made clear to the candidate. The balance between demonstration and exposition, together with opportunities for candidates to work independently as learners, should be carefully considered. For example, a new concept may require a teacher-led approach to learning in order to ensure coverage of appropriate content. However, once this has been done, candidates may be given an activity requiring them to work independently to demonstrate their understanding of the concept.

Outcomes 1 and 2

A group- or candidate-centred approach to learning is recommended in the initial stages. Individuals should be encouraged to make contributions to ideas for planning, carrying out and evaluating practical exercises as part of a group experience. It is important that candidates understand:

- why the planning stages are important to the activity
- how the end results can be affected by inefficient use of time and resource
- how the activity will be reviewed
- why it should be evaluated.

National Unit Specification: support notes (cont)

UNIT Health and Food Technology: Management of Practical Activities (Intermediate 2)

Evaluation of an activity will enable candidates to identify the strengths and weaknesses of their management skills and will lead to an honest reflection of independent work.

Communication skills will be developed through shared ideas and experiences, and the opportunity to offer opinions, comment and constructive criticism on the ideas of others. To encourage candidate participation and motivation, the pace of work, level of challenge and prior knowledge and experiences of candidates should be considered.

Outcome 3

Candidates should be able to access a range of source information which relates to the content e.g. video, text, food commodities, commercial packages. A stations approach could be used as a method for acquiring and reinforcing knowledge and understanding, using different approaches to learning at each station. Outside speakers, such as, dieticians, EHOs, industrial Home Economists, Food Technologist and Trading Standards Officers, could contribute to candidate learning.

The teacher/lecturer can pre-test knowledge and understanding of the content by using oral-questioning techniques during practical activities. When using a group approach, candidates may demonstrate knowledge and understanding by presenting a short talk after a practical activity. It is necessary to cover the entire content of the Unit for the benefit of the overall candidate experience.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Whilst it is possible to devise test instruments for each of the Unit outcomes, it is preferable to use ones which encompass more than one outcome. This approach will reduce the demands of assessment on candidates and leave more time for learning and teaching. The evidence requirements fall into two categories:

- activities
- demonstration of the knowledge and understanding which underpins the practical activity

While attainment of Outcomes 1 and 2 need only be demonstrated on one occasion, it is unlikely that candidates would be ready for assessment until the later stages of the Unit. It is possible for evidence to be gathered when candidates are carrying out practical exercises throughout the Unit.

Outcome 3

In the interests of confidentiality and national standards, it would be more appropriate for all candidates to carry out this assessment item at the same time within any one class.

Further guidance and exemplification on appropriate evidence will be provided in the Subject Guide.

The delivery and assessment of this Unit is open to alternative methods to support the inclusion of all candidates. Examples include:

- extension to the notional design length
- use of technology to record information/instruction and to support assessment situations
- appropriate level of teacher/lecturer or auxiliary support in practical activities
- use of specialist equipment

National Unit Specification: support notes (cont)

UNIT Health and Food Technology:
 Management of Practical Activities (Intermediate 2)

SPECIAL NEEDS

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative outcomes for Units. For information on these, please refer to the SQA document *Guidance on Special Assessment Arrangements* (SQA, 2001).



National Unit Specification: general information

UNIT	Health and Food Technology: Consumer Studies (Intermediate 2)
NUMBER	D269 11
COURSE	Home Economics: Health and Food Technology (Int 2)

SUMMARY

At the end of this Unit, candidates will be able to use investigative techniques to: compare consumer products; draw conclusions from information relating to consumer issues and the food industry; and demonstrate the underpinning knowledge and understanding relating to influences affecting consumer choice of food.

OUTCOMES

- 1 Use skills and techniques to make a comparative study of a consumer product.
- 2 Draw a conclusion from specified source information for a specific task.
- 3 Use knowledge and understanding of an area of study to address a problem or situation.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates will normally be expected to have attained one of the following:

- a Course or its component Units at Intermediate 1 in Home Economics
- Standard Grade Home Economics at General level, or equivalent

The Unit is also suitable for 'new starts' and adult returners with appropriate prior experience.

Administrative Information

Superclass:	BA
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National Unit Specification: general information (cont)

UNIT Health and Food Technology:
Consumer Studies (Intermediate 2)

CREDIT VALUE

1 credit at Intermediate 2.

CORE SKILLS

There is no automatic certification of core skills or core skills components in this Unit.

Additional information about core skills is published in the *Catalogue of Core Skills in National Qualifications* (SQA, 2001).

National Unit Specification: statement of standards

UNIT Health and Food Technology: Consumer Studies (Intermediate 2)

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to the Scottish Qualifications Authority.

OUTCOME 1

Use skills and techniques to make a comparative study of a consumer product.

Performance criteria

- (a) The choice of skills and techniques used is appropriate to the nature of the comparative study.
- (b) The methods of application of the skills and techniques are devised and delivered accurately.
- (c) The results are presented clearly and reflect the differences/similarities across the product range.

Evidence requirements

Recorded evidence must be provided to show that each of the performance criteria has been met on one occasion. The proposed instrument of assessment is an investigation which may form part of a design activity. The investigation could be completed on pro-forma. Attainment could be recorded by the use of an observational checklist. Specific advice:

- (a) The aspects to be compared are identified, eg, taste, appearance, freshness, cost/value for money, effect on the environment. Appropriate choice of techniques would include at least two of the following: sensory evaluation; questionnaire; interview; testing for quality; costing analysis. The techniques chosen must be relevant to the purpose.
- (b) Procedures used to execute the techniques should be carried out accurately and show appreciation of purpose.
- (c) Recording and presenting of results should be easy to interpret.

OUTCOME 2

Draw a conclusion from given source information for a specific task.

Performance criteria

- (a) The main points identified from the given source information relate clearly to the task.
- (b) An accurate conclusion is drawn, supported by a reasoned explanation to meet the needs of the task.

Evidence requirements

Recorded evidence must be provided to show that each of the performance criteria has been met on one occasion. The proposed instrument of assessment is a report which may form part of a design activity. Attainment should be assessed by the use of a marking scheme. Specific advice:

- (a) and (b) – a task could be derived from investigations within a design activity or from an area from the content for the Unit.

National Unit Specification: statement of standards (cont)

UNIT Health and Food Technology:
Consumer Studies (Intermediate 2)

OUTCOME 3

Use knowledge and understanding of an area of study to address a problem or situation.

Performance criterion

- (a) An accurate explanation, reflecting consideration of the problem or situation, is given.

Evidence requirements

Recorded evidence must be provided to show that the performance criterion has been met on one occasion. The proposed instrument of assessment is a question paper requiring short and restricted responses, using a closed-book approach. The questions will be derived from sampling the content of the Unit. Attainment should be assessed by the use of a marking scheme.

National Unit Specification: support notes

UNIT Health and Food Technology: Consumer Studies (Intermediate 2)

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

While the time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

GUIDANCE ON CONTENT AND CONTEXT FOR THIS UNIT

The content on which this Unit is based is listed in the Course specification for Home Economics: Health and Food Technology (Intermediate 2).

This Unit is set in the context of Health and Food Technology. The content of the Unit is concerned with: aspects of the food industry which relate to consumer choice and acceptance of food; technological innovation; consumer protection; the use of comparative testing for products. The candidate is required to develop the skills and techniques used to compare products against criteria for a range of purposes. Candidates will use a variety of investigative techniques in a systematic way, presenting results and conclusions. Knowledge and understanding of an area of the Unit content will be used to address problems.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

Learning and teaching approaches for this Unit should match the Unit outcomes. Knowledge and understanding of the content can be acquired or consolidated through provision of practical activities which focus on the specific area of content.

Outcomes 1 and 2

A candidate-centred approach to learning is recommended. There should be access to source materials, such as commercial food products, as well as videos, magazines and catalogues. The shared experiences of the candidates can be a stimulus to learning, for example, home experiences or experience of the work place. Brainstorming and group discussion should be used in the initial stages to motivate candidates and develop confidence.

Candidates should be given opportunities to identify the main features of a commercial food product and to use these features as a basis for comparison with other products.

A way of introducing candidates to the comparative testing of commercial products is to organise stations and employ a group approach to learning within the stations. The stations could involve candidates looking at different products or looking at one product in detail. The types of activities within stations could be: investigation; sensory evaluation; comparison of an identified feature, eg, nutritional information, costing, home-made and commercial. It is important that the teacher/lecturer provides examples of the procedures for setting up investigations, testing and presenting results. The procedures must be clear so that candidates can replicate the processes for a variety of tasks.

Candidates should be encouraged to communicate and use discussion skills with each other and the teacher/lecturer, so that conclusions drawn can be exchanged during group activity.

National Unit Specification: support notes (cont)

UNIT Health and Food Technology: Consumer Studies (Intermediate 2)

Outcome 3

The underpinning knowledge and understanding should be reinforced by using a more traditional teacher-centred approach. This will ensure coverage of all the content for the Unit. Arrangements for visits and outside speakers should be made to make learning more interesting for the candidate, and give a real-life perspective.

The teacher/lecturer can pre-test knowledge and understanding of the content by using oral-questioning techniques during practical activities. When using a group approach, candidates may demonstrate knowledge and understanding by presenting a short talk after a practical activity. It is necessary to cover the entire content of the Unit for the benefit of the overall candidate experience.

The use of information technology is recommended to enhance the generation of evidence and access to appropriate software is important.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Whilst it is possible to devise test instruments for each of the Unit outcomes, it is preferable to use ones which encompass more than one outcome. This approach will reduce the demands of assessment on candidates and leave more time for learning and teaching. The evidence requirements fall into two categories:

- activities – investigation
- demonstration of the knowledge and understanding which underpins the practical activity.

Outcomes 1 and 2

While attainment of Outcomes 1 and 2 need only be demonstrated on one occasion, it is unlikely that candidates would be ready for assessment until the later stages of the Unit. Assessment could take place as an end of unit test. However, it is possible for evidence to be gathered when candidates are carrying out investigations throughout the Unit.

The evidence requirements demand that the candidate can use investigative techniques to carry out comparative testing of a product, and can present results that are clear to the reader. The investigation could be targeted on a particular range of products, and candidates could have some choice in the methods and techniques to be used.

The report containing the conclusion should be structured, and as short and concise as possible.

Outcome 3

In the interests of confidentiality and national standards it would be more appropriate for all candidates to carry out this assessment item at the same time within any one class.

Further guidance and exemplification on appropriate evidence will be provided in the Subject Guide.

The delivery and assessment of this Unit is open to alternative methods to support the inclusion of all candidates. Examples include:

National Unit Specification: support notes (cont)

UNIT Health and Food Technology: Consumer Studies (Intermediate 2)

- extension to the notional design length
- use of technology to record information/instruction and to support assessment situations
- appropriate level of teacher/lecturer or auxiliary support in practical activities
- use of specialist equipment.

SPECIAL NEEDS

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative outcomes for Units. For information on these, please refer to the SQA document *Guidance on Special Assessment Arrangements* (SQA, 2001).



National Unit Specification: general information

UNIT	Health and Food Technology: Product Development (Intermediate 2)
NUMBER	D270 11
COURSE	Home Economics: Health and Food Technology (Int 2)

SUMMARY

At the end of this Unit candidates will be able to use knowledge, understanding and skills to carry out some of the problem solving processes used in product development for food manufacturing.

OUTCOMES

- 1 Develop ideas for a solution to meet the needs of a product brief.
- 2 Evaluate the solution of product development.
- 3 Use knowledge and understanding of an area of study to address a problem or situation.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates would normally be expected to have attained one of the following:

- a Course or its component Units at Intermediate 1 in Home Economics
- Standard Grade Home Economics at General level, or equivalent

The Unit is also suitable for 'new starts' and adult returners with appropriate prior experience.

Administrative Information

Superclass:	WM
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National Unit Specification: general information (cont)

UNIT Health and Food Technology:
Product Development (Intermediate 2)

CREDIT VALUE

1 credit at Intermediate 2.

CORE SKILLS

This Unit gives automatic certification of the following:

Complete core skills for the Unit	None
Core skills components for the Unit	Critical Thinking Int 2 Reviewing and Evaluating Int 2

Additional information about core skills is published in the *Catalogue of Core Skills in National Qualifications* (SQA, 2001).

National Unit Specification: statement of standards

UNIT Health and Food Technology: Product Development (Intermediate 2)

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to the Scottish Qualifications Authority.

OUTCOME 1

Develop ideas for a solution to meet the needs of a product brief.

Performance criteria

- (a) The brief is analysed and the key points accurately identified.
- (b) Appropriate criteria for a specification are identified in measurable terms.
- (c) Investigations are clear in purpose and appropriate to the criteria identified in the specification.
- (d) A solution is proposed which reflects the results of investigation.
- (e) A prototype for the idea is manufactured to meet the specification.

Evidence requirements

Recorded evidence must be provided to show that each of the performance criteria has been met on one occasion. The proposed instrument of assessment is a design activity. The conditions which apply to the activity are: teacher/lecturer support in the manufacturing stages of the activity should there be a malfunction of equipment; negotiation of a time limit for the design activity. The recorded evidence should be produced as defined in performance criteria (a) - (e) using pro-forma. Attainment could be assessed by the use of a marking scheme and recorded on an observational checklist. Specific advice:

- (a) Recorded evidence to show that the brief has been broken down into key parts.
- (b) The specification should be recorded in measurable terms, in short statements, and should take account of the key points and principles of design.
- (c) Recorded evidence of search and investigation techniques could include: investigation to gain background information, eg, a list of questions to be addressed; technical information, eg, looking at existing products that meet the needs of the brief and identifying their characteristics, identifying or selecting availability of resources; identifying appropriate processes for manufacture.
- (d) Recorded evidence to show **one** idea – evidence could be **one** from the following: story board, design diagrams, recipes, brief descriptive notes.
- (e) Evidence of the prototype – the product/photographic evidence/observational checklist/video.

National Unit Specification: statement of standards (cont)

UNIT Health and Food Technology:
 Product Development (Intermediate 2)

OUTCOME 2

Evaluate the solution of product development.

Performance criterion

- (a) The solution is evaluated against the specification, with accurate explanation.

Evidence requirements

Recorded evidence must be provided to show that the performance criterion has been met on one occasion. The proposed instrument of assessment is a design activity. The evidence should include a general appraisal of how well the solution meets the specification, with suggestions for modifications or improvements, if appropriate. Attainment could be assessed by the use of a marking scheme which takes account of the specification.

OUTCOME 3

Use knowledge and understanding of an area of study to address a problem or situation.

Performance criterion

- (a) An accurate explanation, reflecting consideration of the problem or situation, is given.

Evidence requirements

Recorded evidence must be provided to show that the performance criterion has been met on one occasion. The proposed instrument of assessment is a question paper requiring short and restricted responses, using a closed-book approach. The questions will be derived from sampling the content of the Unit, and may focus on a design activity. Attainment could be assessed by the use of a marking schedule.

National Unit Specification: support notes

UNIT Health and Food Technology: Product Development (Intermediate 2)

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

While the time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

GUIDANCE ON CONTENT AND CONTEXT FOR THIS UNIT

The content on which this Unit is based is listed in the Course specification for Home Economics: Health and Food Technology (Intermediate 2).

This Unit is set in the context of Health and Food Technology. Candidates will be required to demonstrate the knowledge and understanding of the content, which underpins the practical activities in product development. The content is concerned with those aspects of manufacturing which are important in the food industry.

Within the context of Health and Food Technology, the candidate is required to develop skills to solve practical problems. The skills are those of analysis, investigation and evaluation, and they enable candidates to develop ideas for the manufacture of creative and imaginative products. When candidates evaluate the solution of product development, they should be encouraged to look at other commercial products, which have been manufactured to a specification. The principles of design identified within the content should be used as the basis for drawing up specifications for intended products.

Candidates will be expected to explore the physical, sensory and nutritional functions of raw materials in the process of developing a product. The importance of food safety and the Hazard Analysis Critical Control Point (HACCP) procedures should be emphasised. Candidates should understand the properties of the main ingredients in product development and should apply this knowledge in practice. They should also recognise that the balance of ingredients can affect the results. A knowledge of current food processing techniques (cook/chill and freezing) should be acquired, as well as an understanding of the scale of production used by those who manufacture food products.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

Learning and teaching approaches should match the Unit outcomes. Knowledge and understanding of the content can be acquired or consolidated through practical activities which focus on product development. Candidates should have opportunities to extend their knowledge and skills in the production of products which take account of some of the processes used in food manufacture. However, it is not expected that candidates should carry out unrealistic activities which require equipment outside the scope of the classroom.

Successful learning and teaching should be the result of positive partnership between teacher/lecturer and candidate. The purpose of the Unit, and the performance required to attain it, should be made clear to the candidate. The balance between demonstration and exposition, together with opportunities for candidates to work independently as learners, should be carefully considered. For example, a new concept may require a teacher-led approach to learning in order to ensure coverage of

National Unit Specification: support notes (cont)

UNIT Health and Food Technology: Product Development (Intermediate 2)

appropriate content. However, once this has been done, candidates may be given an activity requiring them to work independently to demonstrate their understanding of the concept. A candidate-centred approach is recommended using group or team work to introduce aspects of the food industry.

A group or candidate-centred approach to learning is recommended in the initial stages of Unit delivery. Individuals should be encouraged to make contributions to ideas for product development as part of a group experience. This approach will help to develop candidates' confidence for working independently. Communication skills will be developed through shared ideas and experiences, and through the opportunity to offer opinions, comment and constructive criticism on the ideas of others. To encourage candidate participation and motivation, the pace of work, level of challenge and prior knowledge and experiences of candidates should be considered.

Candidates' skills of evaluation can be developed by encouraging them to look at commercial products. Open discussion and brainstorming can stimulate ideas which may lead to the group formulating opinions about: the product specification; the target group; the raw materials used; how successful the product has been. Food sensory evaluation of existing products is another way of developing evaluation skills.

Sources of information such as video material on commercial food preparation, publications on product development, outside speakers or visits to manufacturing plants will act as a motivating influence. A selection of commercially-manufactured food products and their packaging should be available for candidates to analyse, make use of and evaluate.

It is important that candidates are aware of food safety and hygienic practices in food production. The microbiological safety and risk assessment procedure used in industry should be explained and the benefits to the end-user highlighted. Visits by Environmental Health Officers will provide an added stimulus to learning experiences, as will participation in setting their own HACCP system.

An integrated approach to delivery of the content is recommended, whereby several aspects may be covered during practical application.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Whilst it is possible to devise test instruments for each of the Unit outcomes, it is preferable to use ones which encompass more than one outcome. This approach will reduce the demands of assessment on candidates and leave more time for learning and teaching. The evidence requirements fall into two categories:

- practical activity
- demonstration of the knowledge and understanding which underpins the practical activity.

While attainment of Outcomes 1 and 2 need only be demonstrated on one occasion, it is unlikely that candidates would be ready for assessment until the latter stages of delivery. Assessment could take place as an end of Unit test. However, it is possible for evidence to be gathered when candidates are carrying out practical exercises throughout the Unit.

National Unit Specification: support notes (cont)

UNIT Health and Food Technology: Product Development (Intermediate 2)

Outcome 3

In the interests of confidentiality and national standards, it would be more appropriate for all candidates to carry out this assessment item at the same time within a teaching group.

Further guidance and exemplification on appropriate evidence will be provided in the Subject Guide.

The delivery and assessment of this Unit is open to alternative methods to support the inclusion of all candidates. Examples include:

- extension to the notional design length
- use of technology to record information/instruction and to support assessment situations
- appropriate level of teacher/lecturer or auxiliary support in practical activities
- use of specialist equipment.

SPECIAL NEEDS

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative outcomes for Units. For information on these, please refer to the SQA document *Guidance on Special Assessment Arrangements* (SQA, 2001).