



Level 4 Award in Food Safety Management for Manufacturing

December 2008

This qualification has a Credit Value of 6

QCA Qualification Number 500/5317/6

Description

This qualification covers all of the necessary aspects of food hygiene and safety in depth, providing candidates with a thorough knowledge. Essentially for managers and potential managers in the food and drink manufacturing industry, it concentrates on the need for programmes and procedures to be properly drawn up, introduced and monitored to ensure full compliance with the legislation. The qualification is firmly based on the National Occupational Standards developed by Improve, the Sector Skills Council for the food and drink manufacturing industry, and conforms to the qualification template developed by RSPH and other awarding bodies under the guidance of Improve.

The aim of this qualification is to provide an in-depth knowledge of food safety and food hygiene. Holders of this qualification will have the appropriate knowledge and understanding of food safety to develop and implement food safety management systems.

Summary of Outcomes:

To achieve this qualification, a candidate must:

1. **Understand how food business operators can ensure compliance with relevant food safety legislation, *by being able to:***
 - Explain food business operator and staff responsibilities with regard to food safety legislation
 - Analyse the requirements of food safety legislation and procedures for compliance and enforcement

2. **Understand the operational requirements needed to ensure food safety, *by being able to:***
 - explain the requirements temperature control within a specified food business
 - discuss the implementation, management and application of good hygiene practices, to include cleaning, disinfection, waste disposal and pest control
 - explain procedures for the control of contamination and cross contamination

3. **Understand how to establish food safety management procedures, *by being able to:***
 - outline processes for designing and implementing food safety management procedures, including allocating resources, roles and responsibilities
 - analyse the risks to food safety from microbial, physical, chemical and allergenic hazards in a specified food business
 - communicate food safety management information to staff, visitors and suppliers

4. **Understand the controls required for food safety, *by being able to:***
 - review controls for microbial, physical, chemical and allergenic hazards in a specified food business
 - discuss methods for monitoring and recording food safety hazards
 - determine the corrective actions required if food safety hazards are not controlled

5. Understand how to maintain food safety management procedures, by being able to:

- explain methods for verifying the effectiveness of food safety management procedures
- describe how to implement adjustments to food safety management procedures and the circumstances which may require adjustments to be made
- state the need for, and benefits of, staff training and the maintenance of training records
- outline strategies for developing and maintaining a food safety culture within an organisation.

Content:

1. Compliance with food safety legislation.

Food business operator and staff responsibilities with regard to food safety legislation: the need for food safety legislation due to the effect of poor food hygiene and safety on the incidence of food related disease; effect of food related disease on consumers and food businesses; current food poisoning trends and statistics; importance of high standards of food hygiene and food safety in preventing food borne illness and the benefits to consumers and businesses of effective food safety management systems; responsibilities of food business owners, managers, supervisors and food operatives with regard to food safety legislation; responsibility of food business owners, managers, supervisors and food operatives to co-operate with Environmental Health Officers, local authorities and Trading Standards Officers in carrying out their duties; importance of maintaining appropriate food safety records and their relevance to the “due diligence” defence.

Requirements of food safety legislation and procedures for compliance and enforcement: legislation to include the main provisions of the 2005 legislation (EC Directive 852/2004 ‘Hygiene of foodstuffs’): The Food Hygiene (England) Regulations 2006, The Food Hygiene in Scotland Regulations 2006, The Food Hygiene (Wales) Regulations 2006, The Food Hygiene Regulations (N. Ireland) 2006; provisions of any legislation that supersedes the above; actions and responsibilities of Environmental Health Officers, local authorities and Trading Standards Officers in enforcement of legislation; role of environmental health officers and local authorities in providing advice to food businesses.

2. **Operational requirements needed to ensure food safety.**

Requirements for temperature control: need for temperature control; extent and coverage of current legislation; efficient operation of freezers and refrigerators to maintain food safety; the temperature danger zone; reduction of microbial growth in food by time and temperature control; correct processing/cooking, cooling, chilling, freezing and, defrosting of food; importance of high temperatures during food manufacturing for destroying bacterial cells and spores; maintaining hot or cold temperatures of food; methods for assessing food temperature.

Cleaning, disinfection and pest control: concept of "dirt" in the food and drink manufacturing industry; definitions of cleaning, detergent, disinfection, disinfectant, sterilisation and sanitiser; properties of detergents, disinfectants and sanitisers, their uses within the cleaning cycle; routines for cleaning food processing areas and equipment; advantages and disadvantages of manual and non-manual cleaning methods; cleaning routines to protect the product and create a safe and environmentally acceptable working environment; risks to food safety if cleaning equipment is not separated from food and food processing areas; hazards associated with contamination of food by cleaning chemicals, incidents of chemical food poisoning; principles of "in place cleaning"/"cleaning in place" and "cleaning out of place"; principle areas of contamination and cross contamination from microbiological, chemical and physical sources; principles of good food hygiene practice; role of the manager in implementing and controlling an efficient and workable cleaning programme; factors to consider when designing and planning cleaning schedules; advantages and disadvantages of contract cleaning; monitoring and evaluation of the cleaning process.

Storage and disposal of waste; requirements for waste disposal areas; pests associated with the food industry and their hazards; rats, mice, flies, cockroaches, psocids, pharaoh's ants, stored product insects, birds; life cycles, behaviour and contamination risk; foods attractive to pests; effect of pests on food; measures to prevent and control infestations; use of pest control contractors; monitoring procedures for the presence of pests; management role in pest control; hazards due to rodenticides and pesticides on food premises; legal obligations of owners of premises.

Procedures to control contamination and cross-contamination: definition of contamination and cross-contamination; procedures for reducing / preventing contamination and cross-contamination at different stages of food processing such as receipt of goods, storage and stock control, food handling, processing, packaging and distribution; procedures for detecting the presence of contaminants.

Staff as sources of contaminants and causes of contamination; methods for ensuring high standards of personal hygiene of staff; legal requirements concerning personal hygiene of food operatives; principles of "Food Handlers - Fitness for Work"; methods for monitoring personal hygiene standards; relationship between food handling, the nature of the food and the manufacturing process; reportable medical conditions; pros and cons of medical screening; use of appropriate protective clothing; need to review and revise procedures; management of procedures

3. **Food safety management procedures.**

Design of food safety management procedures: HACCP (Hazard Analysis and Critical Control Point) as a basis for food safety management systems; the seven principles of HACCP; HACCP terminology; advantages of HACCP; Good Manufacturing Practice; pre-requisites of a food safety management system; composition of the food safety management team; importance of a multi-disciplinary approach when devising food safety management procedures; need for, and sources of, expert advice and guidance; stages in developing and implementing the system; importance of identifying all stages and steps involved in the manufacturing process; consideration of the purpose and end-use of the product; risk assessment and the implementation of controls; consideration of safety information relating to the product (such as composition and structure, packaging, storage, distribution method and any anti-microbial treatment) during the assessment of risk and implementation of controls; data recording and record keeping; importance of records for "due diligence".

Need for staff to have specific duties and responsibilities for food safety; allocation of responsibilities for monitoring of control measures, supervision of food safety measures and evaluation of the food safety management procedures; specific skills, knowledge and expertise required for these duties.

Risk to food safety from microbial, physical, chemical and allergenic hazards: microbial (to include toxins and mycotoxins), chemical, physical and allergenic hazards; sources of microbial hazards such as raw food, food operatives/visitors, airborne contaminants, waterborne contaminants, insects and other pests; sources of physical hazards such as buildings, installations and equipment, food operatives, packaging materials, repair and maintenance activities; sources of chemical hazards such as pesticide

and fungicide residues, cleaning chemicals, machine oil; sources of food allergens.

Risk to food safety posed by specific microorganisms, such as viruses, Clostridia, *Bacillus cereus*, *Escherichia coli*, Salmonella, Campylobacter, *Staphylococcus aureus* and *Listeria monocytogenes*; particular hazards posed by spore-forming bacteria; hazards associated with specific process steps; hazards associated with specific products such as sea-food, raw food, canned food and high risk foods; conditions which allow the growth of microorganisms, the germination and growth of spores and the formation of toxins; contamination vehicles and routes; food operatives as carriers of pathogenic microorganisms.

Communicate food safety management procedures: how to communicate issues related to food hygiene and food safety to staff, visitors and suppliers; need for clear and unambiguous language; need to vary the details of the food safety procedures for different job-holders and levels of staff; need to ensure that staff are made aware of their specific roles and responsibilities for food safety.

4. **Controls required for food safety**

Control measures: control measures are required to reduce / eliminate contamination and reduce / eliminate microbial growth in food; identification of critical control points; control measures include appropriate procedures for cleaning and disinfection; appropriate procedures for supplier and stock control; appropriate procedures for the control of pests; appropriate safe working and food handling practices; appropriate temperature controls; methods for validating control measures; effectiveness of control measures for different hazards; effect of different conditions on the effectiveness of control measures.

Monitoring and recording. need to monitor food safety control measures; how to monitor the effectiveness of cleaning and disinfection programmes; monitoring methods for suppliers, receipt of supplies and stock control; monitoring the levels of pest activity; monitoring staff hygiene and working practices; monitoring temperature and cooking / processing time; use of feedback from staff, supervisors, suppliers, customers, auditors and environmental health practitioners; importance of calibrating thermometers and other measuring devices; sampling procedures; need for accurate records; responsibilities of staff, supervisors and managers for monitoring and recording activities.

Corrective actions: definition of corrective action, critical limit, deviation, target level and tolerance; determination of critical limits, target levels and tolerance; situations that may require corrective actions such as freezers, refrigerators, chillers and ovens at incorrect temperatures, contaminated

raw material, thawing or cooking/ processing food for too short a time, presence of pests; appropriate corrective action(s); recording procedures for corrective actions; need for staff training in use of corrective action; effect of corrective action on food safety management procedures.

5. **Maintenance of food safety management procedures**

Verification of food safety management procedures: importance of verifying and reviewing food safety management procedures; evidence and information required for verification of food safety management procedures; verification methods such as ensuring accurate monitoring and recording, observations of staff and processes, microbiological testing, use of consultants; conduct of a review; composition of the review team; importance of regular and planned reviews of procedures.

Implementation of adjustments to food safety management procedures: need to adjust food safety management procedures if a review of procedures indicates that control methods are ineffective, or if enforcement officers recommend or require changes in procedures; factors or events that may require an immediate review and evaluation of the food safety procedures; importance of communicating any changes to the procedures to relevant staff; importance of monitoring and verifying new procedures.

Staff training needs: legal requirements for training in food hygiene; requirements for training / instruction within particular work areas; compilation of training programmes; training aids available for use with food safety courses; identification of learning difficulties that need to be addressed when estimating training needs; role of skills audits in assessing training needs required for the food safety management procedures; staff training records and their maintenance.

Strategies for developing and maintaining a food safety culture within an organisation: value of a food safety culture to a business; requirements of a food safety culture; methods for developing a culture of food safety within an organisation; need for continuous improvement with respect to food safety; methods for ensuring continuous improvement becomes part of the policies and practices of an organisation; need for effective communication within an organisation; methods for communication of changes in protocols and procedures to groups and individuals within an organisation.

Assessment and Grading

Attainment of the Learning Outcomes will be assessed by a synoptic examination set by RSPH. The examination will consist of two papers; paper one will consist of five questions which have to be answered in 90 minutes; paper two will consist of a case study to be completed in one hour. All questions on both of the papers have to be answered.

The qualification is graded as either *Pass* or *Distinction*. Candidates who fail to reach the minimum standard for the *Pass* grade will be recorded as having failed the assessment and will not receive a certificate.

In order to be awarded a *Distinction*, candidates must be able to recall and apply relevant knowledge and facts from the entire specification with few significant omissions and demonstrate a high level of understanding of the principles and concepts used in food safety management. The majority of answers to examination questions will be correct and relevant. Candidates who attain a mark of 80% or greater in *both* examination papers will be deemed to have achieved the criteria for a *Distinction*.

In order to be awarded a *Pass*, candidates must be able to recall and apply relevant knowledge and facts from some parts of the specification and demonstrate a satisfactory level of understanding of the principles and concepts used in food safety management such that the candidate will be able to satisfactorily work in the food manufacturing or related industries. The majority of answers to examination questions will contain some information of relevance. Candidates who attain a mark of 50% or greater in *both* examination papers will be deemed to have achieved the criteria for a *Pass*.

The examinations are provided by RSPH. Dates of examinations are contained in RSPH's timetable of examinations.

Guidance:

Recommended Reading:

Aston, G & Tiffney, J. 1997	The Essential Guide to Food Hygiene and Safety. Eaton Publications.
Sprenger, R.A. 2008	Hygiene for Management (14th Edition) Highfield.co.uk Limited.
Wallace, C.A 2008	Intermediate HACCP (2 nd Edition) Highfield.co.uk Limited

Recommended prior learning:

It is recommended that candidates have a Level 3 qualification in Food Safety, or a Level 2 qualification in Food Safety obtained before January 2006. RSPH also recommends that candidates have a level of literacy and numeracy equivalent to *Level 2* (but see notes on Special Assessment Needs below)

Key Skills:

It is expected that the delivery of this qualification should provide opportunities for the development of the following *key skills*:

Application of Number Levels 3 and 4
Communication Levels 3 and 4
Improving own Learning and Performance Levels 3 and 4
Problem Solving Levels 3 and 4
Working with Others Levels 3 and 4

Guidelines for key skills are shown in Appendix 1.

General Higher Level Skills:

It is expected that the delivery of this qualification should provide opportunities for the development of the following *higher level skills*:

Analysis
Evaluation
Integration

Guidelines for higher level skills are shown in Appendix 2.

Other Issues:

The delivery of this qualification could provide opportunities for contributing to an understanding of Spiritual, Moral, Ethical, Social, Legislative, Economic and Cultural issues and an awareness of Sustainable development, Health and Safety considerations and European developments. Possible areas for discussion are shown below.

Spiritual	The qualification can contribute to an understanding of spiritual issues by allowing students to discuss how the approaches of different religions to food production were driven by considerations of food hygiene and safety.
Moral and Ethical	Moral and ethical issues can be developed in a discussion of the legal responsibilities of employees and employers, such as high standards of hygiene, provision of safe food and employee training.
Social and Cultural	A discussion of possible reasons for changes in food poisoning trends; consumption of raw foods such as fish and shellfish; different manufacturing systems and the growth of food outlets such as sandwich bars and takeaways can contribute to an understanding of social and cultural issues.
Legislative	Food safety legislation is explicit in the qualification. These issues can be developed in a discussion of the need for the legislation and what businesses and managers need to do in order to comply with the legislation.
Economic	A discussion of the economic effect of food related disease on consumers and food businesses and the economic benefits to consumers and businesses of effective food safety management systems can contribute to an understanding of economic issues.
Health and Safety	Health and Safety considerations are explicit in the qualification. For example, the importance of hygiene in the prevention of food poisoning, safe storage of food, HACCP, risk assessment and good manufacturing practice.
Sustainable Development	Awareness of sustainable development issues can be raised through a discussion of materials used in the construction of premises and equipment, the use of packaging for food and as a factor to consider in the resourcing of raw materials from suppliers.
European	The influence of European legislation on UK law is explicit in the specification of the qualification.

National Occupational Standards

The qualification has been mapped to the following National Occupational Standards of Improve

FS-K8 Understand analysis and control of food safety hazards and risks
FS-K9 Understand food safety policy and practice

Further details of these National Occupational Standards can be obtained from RSPH Qualifications.

Restrictions on Candidate Entry:

Candidates should not enter, with another awarding body, for a Level Four qualification in managing food safety in manufacturing.

Special Needs:

Centres that have candidates with special needs should consult RSPH's *Regulations and Guidance for Candidates with Special Assessment Needs*, this is available from RSPH and RSPH's web site (www.rsph.org.uk).

Recommended Qualifications and Experience of Tutors:

RSPH would expect that tutors have teaching experience and a qualification in a relevant subject area, but recognises that experienced teachers can often compensate for a lack of initial subject knowledge, or experienced practitioners for a lack of teaching experience. For the Level 4 Award in Management of Food Safety in Manufacturing, RSPH recommends that a small team of tutors is used.

A suitable course team for the RSPH Level 4 Award in Management of Food Safety in Manufacturing qualification might include:

- Tutors with experience of the management of food manufacturing establishments and food hygiene
- Tutors with experience of HACCP
- Tutors with experience of legislation relating to food and food premises
- Tutors with a background in Environmental Health.

Centres should be registered with RSPH

Any enquiries about this qualification should be made to:

The Qualifications Department,
Royal Society for Public Health,
3rd Floor, Market Towers,
1, Nine Elms Lane,
London SW8 5NQ

Tel. 020 3177 1600
Fax. 020 3177 1601
E.mail examinations@rsph.org.uk
Web-site www.rsph.org.uk

Appendix One: Key Skills Guidelines

This qualification provides a number of opportunities for candidates to develop competence in key skills and to produce evidence towards attainment of key skills. Successful completion of the qualification does not in itself imply attainment of the listed key skills; this is dependent on the candidate producing a portfolio of evidence and the teaching and learning methods adopted by the tutor(s) and candidate in the delivery of the qualification.

The specification content, which provides the most appropriate opportunity for key skill development, is signposted below.

Application of Number

Skill

N3.1 Plan and interpret information from **two** different types of sources, including a large data set.

Specification Content

Graphical and tabular information can be used to obtain information relating to current trends and statistics relating to food-borne illness (Learning Outcome 1).

Correct processing/cooking, cooling, chilling, freezing and defrosting of food (Learning Outcome 2). Processing/cooking times for batches of food can be calculated from the size of the batch and the cooking temperature. Defrosting times for

frozen food can be estimated from the weight of the food.

N4.1 Develop a strategy for using application of number skills over an extended period of time.

Opportunities can be established for using number skills by recording monitoring information in a graphical format (eg time and temperature charts for refrigerators, freezers and cold storage rooms), and using trends in this information to establish if corrective action might be required.

Number skills can be used to develop charts for determining processing/cooking and thawing times for different batches of food

Communication

Skill	Specification Content
C3.1a Take part in a group discussion.	Any part of the content could be used as the basis for a discussion.
C3.2 Read and synthesise information from at least two documents about the same subject. Each document must be a minimum of 1000 words long.	Any part of the content could be researched from textbooks and specialist journals
C4.1a Develop a strategy for using communication skills over an extended period of time.	The development of communication skills are an important element in the qualification. For example: <i>Strategies for developing and maintaining a food safety culture within an organisation</i> <i>Communicate food safety management procedures:</i>

Improving own Learning and Performance

Skill	Specification Content
LP3.1 Set targets using information from appropriate people and plan how these will be met.	The manner in which candidates plan and carry out their programme of learning for this qualification, in consultation with their tutors/trainers, could provide evidence for this key skill or some elements of this key skill.
LP3.2 Take responsibility for your learning, using your plan to help meet targets and improve your performance.	
LP3.3 Review progress and establish evidence of your achievements.	
LP4.1 Develop a strategy for improving your own learning and performance.	
LP 4.2 Monitor progress and adapt your strategy to improve your performance.	
LP 4.3 Evaluate your strategy and present the outcomes of your learning.	

Information and Communication Technology

Skill	Specification Content
ICT3.1 Search for information, using different sources, and multiple search criteria in at least one case.	Information about any part of the content could be obtained from web-sites dealing with food safety. Books and articles can be accessed by on-line searches.
ICT4.1 Develop a strategy for using ICT skills over an extended period of time.	ICT can be used over a period of time by using ICT technology for record keeping purposes, to record operational procedures and to develop and update food safety management procedures.

Problem Solving

Skill	Specification Content
PS3.1 Explore a problem and identify different ways of tackling it.	A number of areas within the specification can be delivered by using a problem-based approach to teaching and learning.
PS3.2 Plan and implement at least one way of solving the problem.	For example: <i>Pest control:</i> measures to prevent and control infestations.
PS3.3 Check if the problem has been solved and review your approach to problem solving.	<i>Personal hygiene:</i> methods for ensuring high standards of personal hygiene of food operatives
PS4.1 Develop a strategy for Problem solving.	<i>Corrective actions:</i> situations that may require corrective actions; effect of corrective action on food safety management procedures
PS4.2 Monitor progress and adapt your strategy for solving the problem.	
PS4.3 Evaluate your strategy and present the outcomes of your problem solving skills.	

Working with Others

<i>Skill</i>	<i>Specification Content</i>
WO3.1 Plan work with others.	The manner in which candidates work with others in carrying out their programme of learning for this qualification, in consultation with their tutors and trainers, could provide evidence for this key skill or some elements of this key skill.
WO3.2 Seek to develop co-operation and check progress towards your agreed objectives.	
WO3.3 Review work with others and agree ways of improving collaborative work in the future.	
WO4.1 Develop a strategy for working with others.	
WO4.2 Monitor progress and adapt your strategy to achieve agreed objectives.	
WO4.3 Evaluate your strategy and present the outcomes from your work with others.	

Appendix Two: Higher Level Skills Guidelines

This qualification provides a number of opportunities to promote the development of general higher level skills and abilities. Successful completion of the qualification does not in itself imply attainment of the listed skills. Promotion of the skills is dependent on the teaching and learning methods adopted by the tutor(s) and candidate in the delivery of the qualification.

The specification content, which provides the most appropriate opportunity for higher level skill development, is signposted below.

Analysis

	Content providing opportunity for skill development	Possible Assessment
A central theme of the qualification is the development and implementation of food safety management procedures. This requires the analysis of potential or actual risks to food safety, analysis of procedures to determine where risks can occur and the analysis of what may have caused any breakdown in procedures	<p>discuss the implementation, management and application of good hygiene practices</p> <p>analyse the risks to food safety</p> <p>discuss methods for monitoring and recording food safety hazards</p> <p>determine the corrective actions required if food safety hazards are not controlled</p>	<p>Paper 1 of the assessment consists of five questions to be answered in 90 minutes. A number of these questions will be based on 'mini' scenarios.</p> <p>Paper 2 of the assessment is a case study.</p> <p>Successful completion of the questions relating to mini scenarios and the case study will require demonstration of analytical skills</p>

Evaluation

	Content providing opportunity for skill development	Possible Assessment
Managers or potential managers in the food manufacturing industry will need to evaluate potential risks to food safety and the effectiveness of their procedures for dealing with these risks. This will include evaluation of pre-requisite procedures such as those for approving suppliers, cleaning, pest control and staff training.	<p>Analyse the requirements of food safety legislation and procedures for compliance and enforcement</p> <p>analyse the risks to food safety</p> <p>review controls for microbial, physical, chemical and allergenic hazards in a specified food business</p> <p>determine the corrective actions required if food safety hazards are not controlled</p> <p>state the need for, and benefits of, staff training and the maintenance of training records</p> <p>outline strategies for developing and maintaining a food safety culture within an organisation</p>	<p>Paper 1 of the assessment consists of five questions to be answered in 90 minutes. A number of these questions will be based on 'mini' scenarios.</p> <p>Paper 2 of the assessment is a case study.</p> <p>Successful completion of the questions relating to mini scenarios and the case study will require an evaluation of the problems and their possible solutions</p>

Integration

	Content providing opportunity for skill development	Possible Assessment
Managers and potential managers will need to integrate their analysis and evaluation of food safety hazards and risks and the various procedures for dealing with such risks into a coherent food safety management system.	Management of food safety will require integration of all of the content for the qualification.	<p>Paper 1 of the assessment consists of five questions to be answered in 90 minutes. A number of these questions will be based on 'mini' scenarios.</p> <p>Paper 2 of the assessment is a case study.</p> <p>Individual questions for Paper 1 and for the case study will cover the content of more than one learning outcome. Successful completion of the assessment will require integration of knowledge and information from different aspects of the qualification.</p>