

# Level 4 Award in Food Safety Management for Manufacturing

## Candidate guidelines

This qualification meets industry's need for a high-level practical training programme with external accreditation.

The training programme is delivered by CIEH registered centres and trainers and consists of at least 36 hours of teaching time, typically over five or more days. Some programmes are delivered on consecutive days, often residentially – these 'intensive' programmes have special examination requirements to maintain the quality of the learning experience.

To undertake and be successful in the assessment you must submit two workplace assignments, as well as taking a written examination.

### **Successful candidates will be able to:**

- guide and advise on the management of food safety in a manufacturing business
- contribute to the management of food safety in a manufacturing business
- identify further technical knowledge necessary in food safety management procedures
- determine further training requirements
- identify areas for legal compliance
- determine good practice
- design an improvement plan
- outline a HACCP-type plan
- promote and encourage good standards of food safety
- liaise with enforcement officers
- deliver level 1 and 2 food safety training (with appropriate training skills).

### **The programme is ideal for:**

- owners or managers of manufacturing businesses
- trainers
- supervisors with level 3 food safety knowledge
- those who monitor and audit food safety systems.

# Syllabus

## A Introduction

Candidates should understand the relationship between food safety and the socio-economic cost of food-borne illness and is able to:

- i Outline the economic costs to employers and the personnel costs of food-borne illnesses.
- ii Explain the benefits to the employer of high standards of food safety.
- iii Describe the manager's role in managing food safety.
- iv State the trend in the incidence of reported cases of food-borne illnesses over recent years and the foods that are most commonly involved.
- v Explain the reasons for seasonal variations and the groups most at risk in reported outbreaks of food-borne illness.

## B Ensuring compliance with legislation and industry guidance

Candidates should understand the format of UK and European food safety legislation as it relates to the management of food safety in a manufacturing business and be able to:

- i Understand the application of EC Directives to member states.
- ii Explain the key aspects of present UK legislation.
- iii Describe the role of industry guides and codes of practice.
- iv State how legislation is applied, actions that may be taken by enforcement officers and the consequences of non-compliance.
- v State the responsibilities of proprietors, managers, supervisors and food handlers towards food safety.
- vi Explain the role that managers have in communicating food safety to staff.
- vii State the responsibility that managers have towards the maintenance of appropriate food safety records and demonstrating due diligence.
- viii Describe the role of management when working with enforcement officers to investigate an outbreak of a food-borne illness.

## C Food safety hazards

Candidates should understand the potential for food contamination and how it can be controlled in a manufacturing business and is able to:

- i Explain the hazards associated with skin injuries and infections, wearing of jewellery, nail varnish, inadequate protective clothing, personal bad habits and practices.
- ii Describe the most common intrinsic and extrinsic physical contaminants, inherent and introduced chemical contaminants (including mycotoxins), microbial contaminants (including bacterial toxins), and food allergens and explain the controls for prevention, detection, and removal.
- iii State, with examples, the symptoms of acute and chronic food-borne illness caused by some chemicals, poisonous plants and certain types of fish.
- iv Describe the structure, shape and size of bacteria, the functions of spores and their role in the survival of bacteria and describe toxin formation, and distinguish between exotoxins and endotoxins.
- v Explain how bacteria multiply, the influencing factors, the generation times and the significance of the growth curve.
- vi Explain the principles involved in using time and temperature to control microbial and enzyme activity in food.
- vii Explain the methods used to identify bacteria.
- viii State the differences between food poisoning and food-borne infection and the symptoms of illness they cause.
- ix State the sources, common foods involved, incidences, vehicles, routes of transmission, onset times, symptoms, likely carrier status and control measures for: *Salmonella* spp, *Clostridium perfringens*, *Staphylococcus Aureus*, *Clostridium botulinum*, *Bacillus cereus*, *Vibrio parahaemolyticus*, *E-coli* and *E-coli* O157, Bacillary dysentery, *Listeria monocytogenes*, *Salmonella* Typhi and *Salmonella* Paratyphi, *Campylobacter* enteritis, viruses, yeasts, moulds and parasites.
- x State the nature of food spoilage organisms, the effects they can have on those who ingest them and how they are controlled in the processing of food.

## D Allocation of responsibilities

Candidates should understand and be able to allocate responsibilities and practice the management skills required to ensure food safety and be able to:

- i State the personal requirements necessary for a food handler and explain the need for careful staff selection.
- ii State why all staff have responsibilities in respect of food safety.
- iii State the controls necessary in respect of persons suffering from, or suspected of, suffering from food-borne illness.
- iv Explain the problems caused by carriers and the controls that can be implemented in a manufacturing environment.
- v Describe the role of the food safety manager when new products are introduced or changes to products are made.
- vi Explain how non-food personnel, such as maintenance staff, visitors and delivery persons, can contaminate food and how this can be managed.

## E Managing the operational requirements of a safe food business

Candidates should understand the importance of factory and equipment design to keep food safe and be able to:

- i Describe the criteria used in selecting a suitable site for a food premises and the internal design with regard to work flow, personnel facilities, waste disposal and adequate cleaning and disinfection
- ii Explain how standards are maintained in respect of transporting food internally and externally
- iii Explain safety information relating to the product and packaging
- iv Describe the design features and properties of food equipment
- v Explain the requirements for efficient and hygienic use of chillers, refrigerated and frozen food storage units
- vi Establish a priority list for repairs and improvements based on food safety risks
- vii Explain the role of safe storage and handling of food to minimise contamination and how stock control systems can be implemented, monitored and recorded

## F Cleaning and disinfection regimes

Candidates should understand the principles and procedures for the satisfactory cleaning and disinfection of food premises and be able to:

- i Explain the need for and benefits of cleaning and the principles of implementing and managing a cleaning system including safe storage of cleaning materials
- ii Define the terms cleaning, detergent, disinfection, sanitiser and sterilisation and the properties required for the chemicals used for each process.
- iii Describe cleaning processes, including CIP, for a range of activities, areas and equipment in a manufacturing plant.
- iv Describe the management and administrative functions in relation to cleaning and cleaning schedules.

## G Supplier quality and safety controls

Candidates should understand the importance of good raw material intake and be able to:

- i Explain the importance of purchasing only from reliable sources.
- ii Describe the methods that can be used to assess the safety of incoming stock and food equipment.
- iii Describe the requirements for safe transport, delivery and receipt of stock.

## H Pest controls

Candidates should understand the need for the control of food pests in premises used for the manufacture of food and be able to:

- i Explain the habitat and characteristics of food pests, such as rats, mice, flies, cockroaches, psocids, pharaoh's ants, stored product insects and birds and the reasons for controlling them in food factories.
- ii Explain the environmental, physical and chemical methods of controlling food pests, including their limitations.
- iii Explain the importance of obtaining and/or utilising professional advice or personnel, and monitoring the effectiveness of their methods.

## **I Establish food safety management procedures**

Candidates should understand the seven basic principles of the HACCP system and be able to:

- i Explain the importance of implementing a HACCP system and how it can be applied to various products.
- ii Explain how to develop a HACCP plan, including a HACCP team, the multidisciplinary nature of HACCP and its scope.
- iii Produce product workflow diagrams for a range of products and explain how they can be verified.

## **J Monitoring the implementation of food safety management procedures**

Candidates should understand the importance of implementing a safe food procedure and be able to:

- i Explain how hazards are identified and how they are assessed as being critical to food safety.
- ii State how critical limits are set, implemented, including tolerance parameters, recorded and monitored.
- iii Explain how corrective actions are implemented if controls are not met and managed.
- iv Establish procedures to verify the efficiency of the HACCP system.
- v State how changes of product and operations can affect food safety procedures and how changes can be managed.

## **K Maintaining food safety management procedures**

Candidates should understand the importance of system evaluation and communication of change and be able to:

- i Explain the importance of monitoring and reviewing procedures and responding to problems.
- ii Explain the importance of regular management inspections and internal audits.
- iii State how the HACCP system can be communicated to all staff and develop a communication system when changes in procedure occur.
- iv Establish procedures to evaluate and review the HACCP system.

## **L Communication, sources of information and training**

Candidates should be able to communicate staff responsibilities within a food management system and be able to:

- i Describe how food safety procedures can be communicated to all staff responsible for its implementation, maintenance, monitoring and evaluation to develop and maintain a food safety culture.
- ii Describe the sources of further information and guidance on food safety and food safety management systems and acknowledge when this may be required.
- iii State the need for, and benefits of, food safety training.
- iv Explain the factors to be considered in the development, content and methods of effective food safety training programmes required for all associated personnel.
- v Explain the use and benefit of assessing training needs and the maintenance of training records.

# Overview

The CIEH Level 4 Award in Food Safety Management for Manufacturing programme is intended to help you develop knowledge and skills in key areas of food safety management, as described in the syllabus. This section provides you, the candidate, with advice on how to approach the programme, how to organise any extra study time you may need, how to plan and undertake the assignments, and how to prepare for the written examination.

All CIEH registered trainers work in accordance with the CIEH Trainers' Charter, so if during your programme you are unclear about how well you are learning or what is required, you should speak to the trainer as soon as possible so that you can receive further assistance.

Whether you are used to studying or taking examinations or not, you should spend a few minutes to read these notes carefully and if there is anything you don't understand you should ask your trainer for advice.

Try to remember that the purpose of the training programme, assignments and examination is to help you to be more effective when you are at work.

You should be given a copy of this guidance at the beginning of your programme.

## How to approach the programme

### Before the programme

If you have received this information in advance, you may have the opportunity to do some preparation for the training.

It is probably best to ask the person who booked you onto the programme to find out if any preparation is necessary. All programmes are different so it may be that the trainer does not require any pre-programme reading or other activity. However, it is always worth speaking to a line manager, if you have one, about what you want to get from the training, apart from the qualification of course! If you do not have a line manager, you could try speaking to the trainer or centre organisation directly, but in any event take some time to think through your objectives for undertaking the training and what you want to achieve.

Most programmes will either be accompanied by session notes or by a textbook chosen from several recommended titles. It is good practice to take your own notes so that you can look back and reflect on the discussions and learning points. Particularly during group work or exercises make sure that you record the conclusions even if someone else volunteers to give the feedback.

If your trainer gives work to be done between days – i.e. homework – always make sure you attempt it. This will give you a chance to check out your understanding and may even give you some examination practice.

### During the programme

The CIEH Level 4 Award in Food Safety Management for Manufacturing programme is delivered over a period of time (minimum of 36 training hours) so there is plenty of time to develop your understanding. It is important to make sure that if you experience any difficulties in the material or subjects being presented, you talk to your trainer as soon as you can. It is probably best to raise problems at the end of the training day or during one of the breaks, although you should also feel free to raise questions during any of the training sessions.

# Programme information

## 1 Programme structure

- 1.1 The programme must cover the syllabus in a minimum contact time of 36 hours. Contact time is the time taken to deliver actual training and does not include independent assignment work, refreshment breaks, revision sessions, or 'mock' examinations.
- 1.2 Training centres formulate the programme structure to suit clients' needs. The training programme must cover the whole syllabus.
- 1.3 In addition to attending training, you are required to submit two assignments.
- 1.4 Where programmes are delivered over a period of five consecutive normal working days (an intensive programme) you must be allowed a period of at least 28 days between the end of the programme and the examination to assimilate the knowledge and complete the assignments.
- 1.5 Ideally the training should be trainer-led with as many opportunities as possible for candidate participation and may include site visits, individual or group exercises. Time taken for site visits should be in addition to the minimum recommended programme length.
- 1.6 The CIEH provides sample examination questions and answer information. You can obtain these from your trainer or centre.
- 1.7 You must attend at least 80% of the programme to be eligible to take the examination. If your programme attendance is below 80% and no special circumstances have prevailed, you will be automatically failed.

## 2 The assignments

- 2.1 You must complete two assignments and have them assessed by your trainer before you sit the examination.
- 2.2 You should be provided with the assignment titles at an early stage of the programme, and a session on selecting and undertaking assignments must form part of the training programme.
- 2.3 There are eight assignment topics – one is compulsory and you must select the second topic from the remaining seven.
- 2.4 Each assignment must contain the following sections:
  - i A description of how a food safety management procedure/control ensures effective compliance with current legislation and codes of practice in a manufacturing business  
10 marks
  - ii An explanation of how a manager in a manufacturing business can establish, monitor and verify food safety management procedures/controls.  
15 marks

- iii A critical analysis of an incident when a food safety management procedure/control failed – including recommendations of the corrective actions that could be taken and an explanation of how this information could be communicated to staff to ensure food safety in the future.  
25 marks

- 2.5 The assignment topics are:
  - A Food safety management procedures (compulsory)
  - B Allergen contamination
  - C Chemical contamination
  - D Cleaning and disinfection
  - E Personal hygiene
  - F Pests
  - G Physical contamination
  - H Temperature

The performance criteria are included on the marking grid on the candidate assessment record.

- 2.6 Each assignment must be related to a specific business or premises, which can be the same for both assignments.
- 2.7 The assignments require you to consider a workplace-based situation in practice so that you will need to carry out some practical research to produce the required report.
- 2.8 Assignments do not have to be lengthy nor do they need to be presented with an excess of photographs, diagrams and detailed appendices. Many assignments are successful between 1,500 and 2500 words. In any event, it is important that your work addresses the appropriate criteria and is readable, accurate and logical in its layout.
- 2.9 Your assignments will be marked by your trainer using the CIEH performance criteria and marking grids on the candidate assessment record. This helps to ensure that all candidates are marked consistently.
- 2.10 Assignments should be written in the style of a report and should include:

An introduction – outlining the purpose and scope of the report and explanation of context of the analysis (i.e. the nature of the business operation).

A full analysis of the topic structured according to three performance criteria

A conclusion – summarising the main findings

References – including full bibliographic details of all the sources used

Appendices – including only essential and relevant material to support key points of the report.

- 2.11 Reports should not exceed 2,500 words (excluding references and appendices).
- 2.12 Documents submitted for assessment cannot be returned to the candidate.
- 2.13 Trainers are encouraged to give guidance to their candidates when they are completing assignments. Up to two drafts of an assignment can be submitted to the trainer for comment prior to submission of the final assessment.
- 2.14 Your trainer will provide support if you start work on your assignments after the end of the training programme. However, there is no reason why you cannot start planning during the training programme itself following the relevant topic being taught.
- 2.15 Before being entered for the examination you must first achieve a 30 marks for each of the assignments. Over-generous marking of poor assignments will not help you as moderators are required to scrutinise assignment marking and, in certain cases, such situations may result in a fail.
- 2.16 Suitable feedback is essential. It should be helpful, constructive, positive and indicate areas where further improvement could be made.
- 2.17 You and your trainer should complete a candidate assessment record for each assignment submitted and sign the verification statement.

### 3 The examination

- 3.1 The examination is designed to test your knowledge and understanding of health and safety so poor grammar and spelling mistakes will not matter. The questions are not designed to trip you up and there are no trick questions.
- 3.2 The examination paper consists of two parts:
 

Part 1 consists of five structured questions each consisting of several parts requiring short answers in spaces provided on the examination paper itself. You are expected to answer all the questions in Part 1. Each question is worth 15 marks.

Part 2 consists of a free response or essay-type question where you answer one question from a choice of three. This question is worth 25 marks.

You will have 2½ hours to complete the examination. The pass mark for the exam is 60%.
- 3.3 Each section of each question has a mark allocation shown in brackets e.g. (3 marks). Obviously a question with 3 marks will require more information than one with only 1 mark. Being aware of this may help you to plan your time better.

- 3.4 The three most common reasons for losing marks are:
  - i **Not reading the question properly**  
Make sure you understand the question before you begin the answer. If you are asked to 'Give three of ...' give the best three you can think of rather than the first three that come into your head. In addition if you read the whole question first, you are less likely to miss the point or answer something that is dealt with elsewhere in the same question.
  - ii **Not giving enough detail**  
You should always provide the fullest answer you can in the space provided. The examiners who mark papers cannot give credit if the answers are not clear or do not have sufficient detail. One-word answers are rarely sufficient.
  - iii **Leaving parts of questions unanswered**  
This might be because you aren't sure of the answer but if you give no answer at all you will automatically lose those marks. In a case like, this and as a last resort, you should make an educated guess.
- 3.5 Some candidates do not manage their time well and find they cannot complete the paper in 2½ hours. Keep a regular check on the clock and avoid spending too much time on one question.

### 4 Pass marks

- 4.1 Candidates who achieve an overall mark between 60–74% will achieve a pass grade, those achieving 75–89% will be awarded a merit grade and those achieving 90% and above will be awarded a distinction grade. Candidates who do not achieve at least 60% will be deemed to have failed.
- 4.2 If, for any reason, you do not achieve a pass grade, you will be referred. You will be given one opportunity to re-sit the examination upon submission of the appropriate candidate entry fee. If you do not re-sit within 12 months of the examination or fail your second attempt, you are required to complete the whole programme again re-sitting the examination and resubmitting the assignments.
- 4.3 The CIEH regrets that it cannot give results directly to individual candidates.
- 4.4 If, after the results have been verified, you are dissatisfied with your mark and grade, the CIEH has an appeal procedure. If you wish to make an appeal you must do so through your CIEH centre within 28 days of the results being received.
- 4.5 If you do not pass first time, you will receive feedback from your trainer on your performance that should help you prepare to re-sit the examination.

## 5 After the examination

- 5.1 It will take approximately eight weeks for you to receive your results. If you are successful, you will have achieved a level of food safety knowledge that is highly regarded not only in the UK, but also around the world. This will enable you to take on responsibilities for managing food safety on behalf of your organisation.
- 5.2 You will need to keep up to date on a regular basis and especially if your area of industry is complex or rapidly changing. You may also be eligible to apply to be a CIEH trainer to deliver programmes leading to the CIEH level 1 and level 2 food safety qualifications, provided you have a training qualification and appropriate work experience. Please contact the Customer Support Team on 020 7827 5800 or e-mail [customer.support@cieh.org](mailto:customer.support@cieh.org) for more information.

We hope that you will find this information helpful and we wish you good luck in your current and future studies.

If you have any queries regarding aspects of the information provided in these guidelines, please contact your registered trainer or training centre.



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