Qualification Specification for:

OCN NI Level 3 Extended Diploma in Food Technology and Science

- Qualification No: 603/7532/2

Qualification Regulation Information

OCN NI Level 3 Extended Diploma in Food Technology and Science
Qualification Number: 603/7532/2

Operational start date: 15 May 2021
Operational end date: 30 April 2026
Certification end date: 30 April 2029

Qualification operational start and end dates indicate the lifecycle of a regulated qualification. The operational end date is the last date by which learners can be registered on a qualification and the certification end date is the last date by which learners can claim their certificate.

All OCN NI regulated qualifications are published to the Register of Regulated Qualifications (**http://register.ofqual.gov.uk/**). This site shows the qualifications and awarding organisations regulated by CCEA Regulation and Ofqual.

OCN NI Contact Details

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Foreword

This document explains OCN NI's requirements for the delivery and assessment of the following regulated qualification:

→ **OCN NI Level 3 Extended Diploma in Food Technology and Science**

This specification sets out:

- Qualification features
- Centre requirements for delivering and assessing the qualification
- The structure and content of the qualification
- Unit details
- Assessment requirements for the qualification
- OCN NI's quality assurance arrangements for the qualification
- Administration

OCN NI will notify centres in writing of any major changes to this specification. We will also publish changes on our website at **www.ocnni.org.uk**

This specification is provided online, so the version available on our website is the most up to date publication. It is important to note that copies of the specification that have been downloaded and printed may be different from this authoritative online version.

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About Regulation

OCN NI

Open College Network Northern Ireland (OCN NI) is a regulated Awarding Organisation based in Northern Ireland. OCN NI is regulated by CCEA Regulation to develop and award professional and technical (vocational) qualifications from Entry Level up to and including Level 5 across all sector areas. In addition, OCN NI is regulated by Ofqual to award similar qualification types in England.

The Regulated Qualification Framework: an overview

The Regulated Qualification Framework (RQF) was introduced on 1st October 2015: the RQF provides a single framework for all regulated qualifications.

Qualification Level

The level indicates the difficulty and complexity of the knowledge and skills associated with any qualification. There are eight levels (Levels 1-8) supported by three 'entry' levels (Entry 1-3).

Qualification Size

Size refers to the estimated total amount of time it could typically take to study and be assessed for a qualification. Size is expressed in terms of Total Qualification Time (TQT), and the part of that time typically spent being taught or supervised, rather than studying alone, is known as Guided Learning Hours (GLH).

Qualification Summary

Sector Subject Area
4.2 Manufacturing technologies

Qualification Aim
The aim of the OCN NI Level 3 Extended Diploma in Food Technology and Science is to prepare learners for employment within the food manufacturing industry.

Qualification Objective
The objective of the OCN NI Level 3 Extended Diploma in Food Technology and Science is to provide learners with skills and knowledge related to food manufacturing including:

- food science, chemistry and microbiology
- food manufacturing, legislation, packaging and labelling
- operational management including quality systems and auditing, and information technology
- food product development and technology
- food factory design and environmental factors

Qualification Target Group
The OCN NI Level 3 Extended Diploma in Food Technology and Science is targeted at learners who are currently or intend to be employed in food technology and/or science roles.

Progression Opportunities
The OCN NI Level 3 Extended Diploma in Food Technology and Science will enable progression to higher level qualifications within the food technology and science industry.

Entry Requirements
Learners must be at least 16 years of age and have a minimum of four GCSE passes at Grade C or above, including English, Mathematics and Science, or equivalent.

Ensuring Health & Safety of Learners

Within the OCN NI Level 3 Extended Diploma in Food Technology and Science the health, safety and security of learners are paramount. Every effort must be made by the centre and those involved in the delivery to ensure that learners operate in a safe and secure environment where risk of injury is minimum. Particular attention should be given to:

- ensuring learners are briefed about health, safety and security procedures including how to identify hazards and report accidents/injuries/dangerous occurrences
- ensuring learners understand the key legislative and best practice aspects of the food manufacturing industry
- ensuring necessary risk assessments are carried out
- ensuring appropriate levels of supervision are agreed and implemented prior to delivery
- ensuring learners are aware of the hazards of working within a food manufacturing and science environment
- clear accident reporting procedures being in place
- tools and/or equipment to ensure they are in safe working order and learners are given proper instruction, training, protective clothing and supervision
- appropriate insurance arrangements being in place

Qualification Support

A Qualification Support pack is available for OCN NI centres within the login area of the OCN NI website (https://www.ocnni.org.uk/my-account/), which includes additional support for teachers, eg planning and assessment templates, guides to best practice, etc.

Delivery Languages

This qualification is available in English only at this time. If you wish to offer the qualification in Welsh or Irish (Gaeilge) then please contact OCN NI who will review demand and provide as appropriate.

Centre Requirements for Delivering the Qualification

Centre Recognition and Qualification Approval

New and existing OCN NI recognised centres must apply for and be granted approval to deliver these qualifications prior to the commencement of delivery.

Centre Staffing

Centres are required to have the following roles in place as a minimum, although a member of staff may hold more than one role*:

- Centre contact
- Programme co-ordinator
- Assessor
- Internal Verifier

*Note: A person cannot be an internal verifier for any evidence they have assessed.

Centres must ensure that staff delivering, assessing and internally verifying qualifications are both trained appropriately and competent to do so.

Tutors and Assessors

The qualification is assessed within the centre and is subject to OCN NI's quality assurance processes. Units are achieved through internally set, internally assessed, and internally verified evidence.

Tutors and Assessors must have:

- at least an Honours degree (2.2 classification), or an equivalent qualification in any of the following:
  - → Food Technology
  - → Food Science
  - → Food Business
  - → or a closely related subject

AND ALSO

- a minimum of 9 months relevant post qualification experience working in the food industry or a Master's degree or higher in a relevant subject

Internal Verification

OCN NI qualifications must be scrutinised through the centre's internal quality assurance processes as part of the recognised centre agreement with OCN NI. The centre must appoint an experienced and trained internal verifier whose responsibility is to act as the internal quality monitor for the verification of the delivery and assessment of the qualifications.

The centre must agree a working model for internal verification with OCN NI prior to delivery of the qualification.

Internal Verifiers must:

- have at least one year's occupational experience in the areas they are internally verifying
- attend OCN NI's internal verifier training if not already completed

Internal verifiers are required to:

- support tutors and assessors
- sample assessments according to the centre's sampling strategy
- ensure tasks are appropriate to the level being assessed
- maintain up to date records supporting the verification of assessment and learner achievement

Structure and Unit Content

OCN NI Level 3 Extended Diploma in Food Technology and Science

In order to achieve this qualification the learner must achieve all mandatory units – total 180 credits.

Total Qualification Time (TQT) for this qualification: 1800 hours
Guided Learning Hours (GLH) for this qualification: 1080 hours

Unit Reference Number	OCN NI Unit Code	Unit Title	Credit Value	GLH	Level
Mandatory units					
H/618/7181	CBF397	Nutritional Health	10	60	Three
K/618/7182	CBF398	Food Science	15	90	Three
M/618/7183	CBF399	Understanding Food Safety and HACCP	10	60	Three
T/618/7184	CBF400	Understanding Food Manufacturing	10	60	Three
A/618/7185	CBF402	Food Legislation and Labelling	5	30	Three
F/618/7186	CBF403	Role of a Food Technologist	5	30	Three
J/618/7187	CBF404	Sensory Analysis in Food Production	10	60	Three
L/618/7188	CBF405	Managing Manufacturing Information and Data	10	60	Three
R/618/7189	CBF406	Food Packaging	5	30	Three
J/618/7190	CBF407	Operational Management in the Food Industry	10	60	Three
L/618/7191	CBF408	Food Chemistry	10	60	Three
R/618/7192	CBF409	Food Microbiology	10	60	Three
Y/618/7193	CBF410	Quality Systems and Auditing within Food Manufacturing	10	60	Three
D/618/7194	CBF411	Food Product Development	10	60	Three

H/618/7195	CBF412	Meat Science and Technology	10	60	Three
K/618/7196	CBF413	Manufacturing Bakery Products	5	30	Three
M/618/7197	CBF414	Fresh Produce Technology	5	30	Three
T/618/7198	CBF415	Dairy Science and Technology	15	90	Three
A/618/7199	CBF416	Food Factory Design and Environmental Factors	15	90	Three

Unit Grading Structure

Each unit will be graded as Pass/Merit/Distinction/Fail. All units are internally assessed within this qualification, and each unit has specified assessment criteria at the Pass, Merit and Distinction unit grades.

Unit grading Matrix

Unit grading matrix
• To achieve a pass in a unit the learner must have successfully completed all of the pass assessment criteria in that unit • To achieve a merit in a unit the learner must have successfully completed all of the pass and merit criteria in that unit • To achieve a distinction in a unit the learner must have successfully completed all of the pass, merit and distinction criteria in that unit

Qualification Grading Structure

The qualification will be graded overall as follows:

Pass Pass Pass
Merit Pass Pass
Merit Merit Pass
Merit Merit Merit
Distinction Merit Merit
Distinction Distinction Merit
Distinction Distinction Distinction
Distinction* Distinction Distinction
Distinction* Distinction* Distinction
Distinction* Distinction* Distinction*

Rationale for Grading Across the Units

Learners achieving a pass should have a sound knowledge and understanding of the area being assessed, the majority of assessment criteria (AC) are at pass level. Learners meeting all learning outcomes at pass standards stated in the AC in a unit will gain a pass for that unit.

Learners achieving a merit will have demonstrated that they can complete more complex tasks beyond the pass level; there are fewer AC's at these levels. Learners meeting all learning outcomes at pass standards, and where available also at merit standards stated in the AC in a unit will gain a merit for that unit.

Learners achieving a distinction will have demonstrated they can complete more complex tasks at a consistently high level, beyond the merit level; there are fewer AC's at these levels. Learners meeting all learning outcomes at pass standards, and where available also at merit and distinction standards stated in the AC in a unit will gain a distinction for that unit.

Calculation of the Qualification Grade

The above grades are attained by gaining points for the successful achievement of each unit and the aggregation of those points and conversion to a qualification grade. The following table details the points allocated for pass, merit and distinction for each of the units within the qualification.

Unit Title	Unit Code	Credit Value	Points per unit grade		
			Pass	Merit	Distinction
Nutritional Health	H/618/7181	10	70	80	90
Food Science	K/618/7182	15	105	120	135
Understanding Food Safety and HACCP	M/618/7183	10	70	80	90
Understanding Food Manufacturing	T/618/7184	10	70	80	90
Food Legislation and Labelling	A/618/7185	5	35	40	45
Role of a Food Technologist	F/618/7186	5	35	40	45
Sensory Analysis in Food Production	J/618/7187	10	70	80	90
Managing Manufacturing Information and Data	L/618/7188	10	70	80	90
Food Packaging	R/618/7189	5	35	40	45
Operational Management in the Food Industry	J/618/7190	10	70	80	90
Food Chemistry	L/618/7191	10	70	80	90
Food Microbiology	R/618/7192	10	70	80	90
Quality Systems and Auditing within Food Manufacturing	Y/618/7193	10	70	80	90
Food Product Development	D/618/7194	10	70	80	90
Meat Science and Technology	H/618/7195	10	70	80	90
Manufacturing Bakery Products	K/618/7196	5	35	40	45
Fresh Produce Technology	M/618/7197	5	35	40	45

Unit Title	Unit Code	Credit Value	Points per unit grade		
			Pass	Merit	Distinction
Dairy Science and Technology	T/618/7198	15	105	120	135
Food Factory Design and Environmental Factors	A/618/7199	15	105	120	135

The points per unit are added up and then converted to a qualification grade using the following table.

Points for Qualification Grade Conversion:

→ OCN NI Level 3 Extended Diploma in Food Technology and Science

Points range	Grade
1260 - 1299	PPP
1300 - 1339	MPP
1340 - 1379	MMP
1380 - 1419	MMM
1420 - 1459	DMM
1460 - 1499	DDM
1500 - 1529	DDD
1530 - 1559	D*DD
1560 - 1589	D*D*D
1590 and above	D*D*D*

Unit Details

Title	Nutritional Health
Level	Three
Credit Value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF397
Unit Reference No	H/618/7181
Unit purpose and aim(s): This unit will enable the learner to understand nutritional health, fundamentals of a healthy diet including characteristics of key dietary nutrients and related diseases and disorders.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand nutrition and how it contributes to health.	1.1. Explain what is meant by the term nutrition and the importance of nutritional awareness within the food industry. 1.2. Summarise the key benefits of good nutrition, and the importance of a healthy diet and its relationship to well-being. 1.3. Explain what is meant by energy balance and the energy density of foods and diets.		
2. Understand nutrients found in foods and their effects on the body.	2.1. Compare and contrast the functions and sources of nutrients found in different foods and their effects on the body. 2.2. Explain the effects of different nutrients on health if consumed in insufficient quantities and excessive quantities. 2.3. Compare and contrast the nutritional quality of different types of foods prior to processing and the effects of processing techniques on quality. 2.4. Explain what is meant by functional foods and their purpose.	2.M.1 Evaluate the nutritional health benefits of different functional foods. 2.M.2 Explain how the active ingredients of different functional foods impact on the body's nutritional health.	

3. Understand healthy diets.	3.1. Explain what is meant by a healthy diet and the importance of portion control. 3.2. Explain how UK dietary guidelines are used to promote a healthy diet and assist with setting and achieving nutritional targets.	3.M.1 Use nutritional analysis software to analyse a given dietary record. 3.M.2 Interpret the nutritional analysis undertaken in AC 3.M.1. to evaluate the nutritional quality of the diet.	3.D.1 Use nutritional analysis undertaken in AC 3.M.2 to make recommendations using Dietary Reference Values (DRV) and guidelines.
4. Understand the relationship between food and diet-related diseases and disorders.	4.1. Explain the main symptoms of different diet-related diseases and disorders. 4.2. Summarise dietary improvements that may assist with the treatment or management of symptoms of diet-related diseases and disorders. 4.3. Summarise how foods and nutrients contribute to the development of or trigger the symptoms of diet-related diseases and disorders.	4.M.1 Explain the relationship between diet and the progression of given diet related diseases.	4.D.1 Develop a diet plan for a given individual to assist with the management of a diet-related condition and provide appropriate advice.

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log

Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Food Science
Level	Three
Credit Value	15
Guided Learning Hours (GLH)	90
OCN NI Unit Code	CBF398
Unit Reference No	K/618/7182
Unit purpose and aim(s): This unit with enable the learner to gain an understanding of the science relevant to the work of a food technician within the food industry including the manufacture, control and testing of food products.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand periodicity and properties of elements relevant to food.	1.1 Define key terms in relation to elements and the periodic table: a) Atomic Theory b) Periodic Table c) Chemical and Molar Quantities 1.2 Use the appropriate quantities in which chemical systems react.	1.M.1 Use the results from chemical analysis to calculate the molarity of an unknown solution. 1.M.2 Explain situations in which chemical quantities are required to be used in food analysis.	
2. Be able to apply health and safety procedures to minimise risk.	2.1 Use appropriate health and safety procedures in order to minimise risk from identified hazards and justify their use.		
3. Understand chemical testing techniques for food materials.	3.1. Use and explain appropriate chemical testing techniques used to prepare, select and test food materials for: a) fat content b) moisture c) dry matter	3.M.1 Justify the use of the chemical testing techniques identified in AC 3.1.	3.D.1 Review the chosen testing technique, identifying potential errors and the effect of the accuracy of the results from chemical testing techniques.
4. Be able to use biological testing techniques on food materials.	4.1 Use appropriate biological testing techniques to prepare, select and test food materials for bacterial enumeration. 4.2 Use appropriate biological testing techniques to prepare cells for microscopy. 4.3 Explain the multiplication of microorganisms. 4.4 Summarise the biological principles of plants and animals as food sources.	4.M.1 Evaluate the biological principles of plants and animals as food sources.	4.D.1 Calculate the number of viable micro-organisms found in given food products.

5. Be able to use physiochemical and sensory testing techniques on food materials.	5.1 Use appropriate physiochemical and sensory testing techniques to prepare, select and test food materials for: a) pH b) colour c) viscosity d) texture	5.M.1 Justify the use of the appropriate physiochemical and sensory testing techniques identified in AC 5.1.	5.D.1 Review the chosen testing method, identifying potential errors and the effect of the accuracy of the results from appropriate physiochemical and sensory testing techniques.
6. Understand colloidal systems in food products.	6.1 Explain different colloidal systems in food products.	6.M.1 Analyse factors that may affect the formation and stability of a colloidal system.	6.D.1 Analyse the role of emulsifiers and stabilisers in emulsion formation and stability.

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Understanding Food Safety and HACCP
Level	Three
Credit value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF399
Unit Reference No	M/618/7183

Unit purpose and aim(s): This unit will enable the learner to understand the importance of food safety to consumers, industry and regulatory authorities. This unit will also develop the learners' understanding of the correct handling of food at all stages in the food supply chain, contamination, the need for good food hygiene and the implementation of Hazard Analysis and Critical Control Point (HACCP).

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand food safety for consumers and manufacturers.	1.1. Explain the importance of food safety for consumers and manufacturers.	1.M.1 Explain the main causes of food poisoning. 1.M.2 Explain high-risk foods in relation to the increased risk to consumer safety.	
2. Understand factors that contribute to the contamination of food.	2.1. Summarise possible contaminants that may occur in food including: a) chemical b) physical c) microbial d) allergenic 2.2. Explain the main routes of transmission in food poisoning and food borne diseases.	2.M.1 Analyse the links between the causative organisms including symptoms, sources, types of foods involved and routes of transmission for the main types of food poisoning and food borne diseases.	2.D.1 Analyse the conditions under which contaminants can increase the risk to consumer safety.
3. Understand the preventative measures required to ensure food safety and their importance.	3.1. Explain the preventative measures used within the food industry in relation to food safety and their effectiveness. 3.2. Explain what is meant by due diligence defence in relation to food safety.	3.M.1 Explain the importance of monitoring preventative procedures used in order to ensure food safety.	
4. Be able to apply the principles of HACCP to develop a manufacturing process.	4.1. Summarise the five preliminary steps involved in the application of principles of HACCP. 4.2. Develop a flow diagram for a given product to include Critical Control Points (CCPs).	4.M.1 Set with justification, critical limits against identified CCPs in AC 4.2.	4.D.1 Diagnose issues in a given HACCP plan identifying areas for possible improvement.

5. Understand Food security, Vulnerability Assessment Critical Control Point (VACCP) and Threat Assessment Critical Control Point (TACCP).	5.1. Explain the importance of Food Security. 5.2. Explain the role of VACCP and TACCP in the food industry.		

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Understanding Food Manufacturing
Level	Three
Credit value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF400
Unit Reference No	T/618/7184
Unit purpose and aim(s): This unit will enable the learner to understand the food manufacturing industry and food manufacturing operations.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand food manufacturing operations.	1.1. Explain the key features of common food manufacturing operations.	1.M.1 Demonstrate key features of common food manufacturing operations in a given practical environment.	1.D.1 Evaluate and formulate improvements to a given manufacturing operation.
2. Understand planning and control within food manufacturing operations.	2.1. Explain the main aspects of planning and control within food manufacturing operations.	2.M.1 Analyse the food manufacturing planning and control systems and procedures.	
3. Understand the key stages in the manufacturing of food products and selection of raw materials.	3.1. Explain the key stages in the manufacturing of food products within Northern Ireland. 3.2. Explain how the selection of raw material impacts on the final product. 3.3 Define the meaning of key terms used in HACCP.	3.M.1 Create detailed product and process specifications relating to the food production identified in AC 3.1, clearly identifying the main features of manufacturing at each stage. 3.M.2 Explain how the principles of HACCP relate to the food manufacturing sector identified in AC 3.1.	3.D.1 Evaluate the importance of HACCP plans being implemented, verified and maintained.

Assessment Guidance		
The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.		
Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Sensory Analysis in Food Production
Level	Three
Credit value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF404
Unit Reference No	J/618/7187
Unit purpose and aim(s): This unit will enable the learner to understand the role of sensory analysis in food production. Learners will also understand how to undertake sensory evaluations.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the function of senses and how they influence food perception.	1.1. Analyse the function of and how the interaction of the following senses influences the sensory perception of food: a) taste b) smell c) colour perception d) texture perception	1.M.1 Explain how single senses interact with each other to provide a comprehensive sensory perception.	
2. Understand sensory testing methods.	2.1. Explain the purpose of sensory evaluation and its use within the food industry. 2.2. Explain the three main categories of sensory analysis tests including affective, discrimination and descriptive. 2.3. Explain the main sensory analysis methods within each category and their most suitable applications.	2.M.1 Compare and contrast the effectiveness of objective and subjective methods for the sensory evaluation of foods.	2.D.1 Interpret given data from objective testing to determine food acceptance.
3. Be able to carry out a sensory evaluation.	3.1. Carry out a sensory evaluation on at least three different types of foods. 3.2. Critically compare affective, discriminative and descriptive methods of sensory assessment employed to evaluate different foods.	3.M.1 Analyse data from sensory evaluations undertaken in AC 3.1 to inform decisions regarding future food production.	3.D.1 Evaluate the effectiveness of sensory assessment process used for the given food products in AC 3.1.

Assessment Guidance		
The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.		
Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Managing Manufacturing Information and Data
Level	Three
Credit value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF405
Unit Reference No	L/618/7188
Unit purpose and aim(s): This unit will enable the learners to develop the mathematical, statistical and information technology skills and knowledge required to work as food technicians within the food industry.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Be able to use scientific data, algebraic, statistical and probabilistic methods and techniques in the food manufacturing processes.	1.2. Use scientific data and apply the following mathematical methods and techniques to solve given problems within the food manufacturing processes: a) algebra b) statistics c) probability	1.M.1 Implement a given plan to solve a given problem using scientific data and applying mathematical methods and techniques. 1.M.2 Present results of the plan implemented in AC 1.M.1 to a given audience.	1.D.1 Evaluate the mathematical methods and techniques used in AC 1.M.1 including data collection.
2. Be able to use indices, logarithms and functions to solve food manufacturing problems.	2.1. Use indices, logarithms and functions to solve a given problem within a food manufacturing process.	2.M.1 Analyse possible sources of errors in data collected for problem identified AC 2.1.	
3. Be able to use information technology and management information systems in the food manufacturing processes.	3.1. Use information communication technology and management software within a given food manufacturing process. 3.2. Explain the use of relevant food processing applications and management information systems identified in AC 3.1. 3.3. Demonstrate use of the main IT productivity applications in food manufacturing.	3.M.1 Apply information in the relevant Microsoft Office Suite and perform specific tasks to utilise data analysis.	3.D.1 Evaluate the use of given software and applications in relevant food processing applications and management information systems.

Assessment Guidance		
The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.		
Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
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Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Food Packaging
Level	Three
Credit value	5
Guided Learning Hours (GLH)	30
OCN NI Unit Code	CBF406
Unit Reference No	R/618/7189
Unit purpose and aim(s): This unit will enable the learner to understand the functions of food packaging and materials used in packaging and carry out food packaging evaluation.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the functions of food packaging.	1.1. Explain the purpose and key functions of food packaging.	1.M.1 Evaluate the functions of a given food packaging item.	1.D.1 Evaluate the economic and environmental over-riders of packaging.
2. Understand the role of packaging materials in food product preservation.	2.1 Explain the role of packaging materials to prevent food spoilage.	2.M.1 Analyse a packaging process that may be employed to mitigate spoilage of a given food product.	
3. Understand the content of a food packaging specification.	3.1. Explain the types of information that must be included on a food packaging specification. 3.2. Summarise the importance of including food standards information on food packaging including adherence to relevant legislation.		
4. Be able to carry out a scientific evaluation of a food package.	4.1. Explain at least five different techniques used to analyse food packing. 4.2. Select and carry out at least three laboratory techniques identified in AC 4.1 to analyse given food packaging.	4.M.1 Justify the choice of techniques used to analyse food packaging selected in AC 4.2.	4.D.1 Evaluate the results of the tests carried out in AC 4.2.

Assessment Guidance		
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E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Operational Management in the Food Industry
Level	Three
Credit value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF407
Unit Reference No	J/618/7190
Unit purpose and aim(s): This unit will enable the learner to gain the knowledge and skills relevant to supervise and manage resources and individuals within the food manufacturing industry.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the efficient use of resources in food manufacturing.	1.1 Explain the main types of resources managed by team leaders in food manufacturing. 1.2 Summarise how the resources in AC 1.1 may be measured and managed efficiently and effectively.	1.M.1 Analyse the consumption of resources for a given food manufacturing business.	1.D.1 Justify techniques that could be implemented by the food manufacturing business identified in 1.M.1 to improve efficiency and plan for future resource allocation.
2. Understand production planning in food manufacturing.	2.1 Compare and contrast the three main types of planning in food manufacturing including application of each. 2.2 Explain the factors which may impact scheduling and planning in food manufacturing. 2.3 Summarise how the factors identified in AC 2.2 will impact supply and demand.		
3. Understand human resource management in food manufacturing.	3.1. Explain human resource management in food manufacturing including the role and function of the following: a) recruitment and selection procedures b) target setting and tracking c) disciplinary and grievance procedures d) performance management procedures	3.M.1 Evaluate job applications for a given food manufacturing role, selecting, with justification, appropriate candidates for interview. 3.M.2 Perform an interview to assess the suitability of a candidate for a given food manufacturing job role.	3.D.1 Analyse a given disciplinary case study, recommending with justification, appropriate action to be taken. 3.D.2 Evaluate the outcomes of a performance review interview, providing constructive feedback to the interviewee which includes recommendations for future development against performance targets.

	3.2. Summarise key legislation in relation to human resource management in food manufacturing.		
4. Understand financial control in food manufacturing systems.	4.1. Summarise the importance of controlling costs within a food manufacturing business. 4.2. Explain the different types of costs incurred in a food manufacturing business. 4.3. Explain methods to control finance in a food manufacturing business.		

Assessment Guidance

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E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Food Chemistry
Level	Three
Credit value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF408
Unit Reference No	L/618/7191

Unit purpose and aim(s): This unit will enable the learner to develop scientific knowledge and apply it to the main chemical groups found in foods. Learners will develop an understanding of the composition, structure and functionality of proteins, enzymes, carbohydrates and lipids present within foods.

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the structure and functions of proteins, denaturation and effects of pH.	1.1 Explain the structure and functions of proteins and denaturation. 1.2 Explain the effect of pH on zwitterion formation.	1.M.1 Compare and contrast the different structural levels of protein and the types of bonding that take place.	1.D.1 Evaluate the role of intramolecular and intermolecular forces in protein denaturation.
2. Understand the structure and actions of enzymes.	2.1 Explain the structure and actions of enzymes. 2.2 Explain the Lock and Key Theory in relation to enzymic browning.	2.M.1 Analyse the cause and effect of enzyme denaturation.	
3. Understand the structure of and reactions associated with different carbohydrates.	3.1. Explain the structure of and reactions associated with carbohydrates including the process of starch gelatinisation. 3.2. Critically compare different carbohydrate structures based on their reactions.		
4. Understand the structure of and reactions associated with lipids.	4.1. Explain the structure and reactions associated with lipids and why they demonstrate plasticity.	4.M.1 Compare and contrast hydrolytic and oxidative rancidity and its impact on foods.	4.D.1 Analyse the cause and degree of rancidity of an oil based on Free Fatty Acid Value and Peroxide Value.

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E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Quality Systems and Auditing within Food Manufacturing
Level	Three
Credit value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF410
Unit Reference No	Y/618/7193

Unit purpose and aim(s): This unit will enable the learner to understand the skills and knowledge in the management of quality in food manufacturing including current Quality Management Systems, Auditing, and Good Manufacturing Practice (GMP).

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Know the concept of quality and its associated terminology.	1.1 Explain the main terms and definitions related to quality in food manufacturing. 1.2 Summarise the expectations of quality held by food manufacturers and consumers. 1.3 Summarise the legal requirements for quality in food manufacture.	1.M.1 Explain how different factors and constraints may impact quality during food manufacturing.	.
2. Understand Quality Management Systems.	2.1 Outline Quality Management Systems currently used within food manufacturing. 2.2 Summarise the importance of Quality Management Systems in food manufacturing.	2.M.1 Explain the rationale for various types of Quality Management Systems.	2.D.1 Justify the implementation of Quality Management Systems in a specified food manufacturing sector.
3. Be able to carry out a quality audit in food manufacturing.	3.1. Explain the role and importance of auditing in food manufacturing. 3.2. Compare and contrast internal, external and third-party audits. 3.3. Carry out a quality audit using appropriate processes and documentation. 3.4. Summarise the findings from the quality audit carried out in AC 3.3.	3.M.1 Interpret the findings of the quality audit summarised in AC 3.4.	3.D.1 Develop, with justification, corrective actions based on interpretation of findings made in AC 3.M.1.

4. Understand Good Manufacturing Practices (GMP) to ensure food safety in a food manufacturing process.	4.1. Explain with examples what is meant by the term GMP. 4.2. Explain the purpose of GMP for ensuring food safety in food manufacturing. 4.3. Summarise GMP implemented within a given manufacturing environment.	4.M.1 Justify the importance of the GMP implemented in AC 4.3.	

Assessment Guidance

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Title	Food Product Development
Level	Three
Credit value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF411
Unit Reference No	D/618/7194
Unit purpose and aim(s): This unit will enable the learner to understand the stages involved in the development of a new product or improvement of an existing product. The learner will also understand the relationship between the consumer, market needs and product development/improvement in the food industry.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the stages involved in the development of a new or improved food product.	1.1 Summarise the stages involved in the development of a new or improved food product. 1.2 Explain the rationale for carrying out market research when developing a new food product or improving an existing one.	1.M.1 Create a new food product development proposal including evidence from idea generation and market research analysis.	1.D.1 Create a development portfolio for a new or improved product based on the proposal created in AC 1.M.1, including evaluation of rationale and commercial viability.
2. Be able to create a new or improved food prototype product.	2.1 Create a new or improved food prototype product. 2.2 Carry out market research in relation to the food prototype product created in AC 2.1.	2.M.1 Plan and carry out a taste panel for a new/improved food prototype product. 2.M.2 Explain how the interpretation of the results of a taste panel will influence the food product. 2.M.3 Interpret the results of the taste panel carried out in AC 2.M.1.	2.D.1 Explain the processes and challenges involved in translating new food product concepts to industrial scale food manufacture for the food product developed in AC 2.1.
3. Be able to develop a specification for a new or improved food product.	3.1. Explain the importance of developing a specification for a new or improved food product. 3.2. Explain how legislation, safety and quality standards impact on specification development. 3.3. Develop a specification for a new or improved food product created in AC 2.1.		

4. Be able to evaluate a food product and associated development process.	4.1. Explain the importance of evaluating a food product and associated development process. 4.2. Carry out an evaluation of the product created in AC 2.1 including: a) attributes b) development processes	4.M.1 Use the evaluation carried out in AC 4.2 to propose and justify possible improvements to a food product and associated development processes.	

Assessment Guidance

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E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Meat Science and Technology
Level	Three
Credit value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF412
Unit Reference No	H/618/7195
Unit purpose and aim(s): This unit will enable the learner to gain knowledge and understanding of the processes involved in transforming a live animal into fresh meat including supply chain, quality and the application of technology.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the stages of the meat supply chain.	1.1. Analyse the role of meat in the meat supply chain. 1.2. Explain the processes involved in the handling and selection of animals for meat.		
2. Understand the primary processes involved in converting living animals into meat.	2.1. Explain the primary processes involved in converting a living animal into fresh quality meat suitable for human consumption. 2.2. Justify the selection of a specific process for the manufacture of a given meat product. 2.3. Explain the actions that may be taken by a food processor to improve the quality of fresh meat.	2.M.1 Analyse the factors that impact on fresh meat quality including post-slaughter chemical changes and hygiene. 2.M.2 Explain the relationship between the pricing of prime cuts of meat and their quality characteristics.	2.D.1 Evaluate how pre-slaughter handling, slaughter and chilling operations impact the quality of fresh meat.
3. Understand the processes used and quality characteristics of added value meat products.	3.1. Explain meat quality characteristics important to the producer, processor, retailer and consumer. 3.2. Summarise the variety of meat products that can be produced from fresh meat raw materials.	3.M.1 Evaluate the quality of a given added value product for consumption. 3.M.2 Evaluate the processes of contamination, curing, coating, marinating and cooking used to add value to meat.	3.D.1 Explain with justification how value may be added to a given meat product.
4. Understand the application of technology and innovation within the meat sector.	4.1. Explain emerging meat processing software packages and their applications. 4.2. Explain the features of alternative meat and protein products.	4.M.1 Analyse the digitalisation of traceability in the meat supply chain. 4.M.2 Evaluate the effectiveness of a given meat processing software package making recommendations	4.D.1 Justify the use of digital technology in the safety and transparency of meat supply chain traceability.

	4.3. Explain possible applications of Artificial Intelligence and robotic systems within meat processing.	for improvement or replacement.	

Assessment Guidance

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Title	Manufacturing Bakery Products
Level	Three
Credit value	5
Guided Learning Hours (GLH)	30
OCN NI Unit Code	CBF413
Unit Reference No	K/618/7196
Unit purpose and aim(s): This unit will enable the learner to understand how to manufacture bakery and related products from raw material to completed product.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the supply chain for raw materials and key ingredients used in the manufacture of bakery products.	1.1. Explain the stages of the supply chain for the basic raw materials used to manufacture a given bakery product. 1.2. Explain the function and importance of key ingredients used in the manufacture of bakery products identified in AC 1.1.	1.M.1 Select and justify the role of the ingredients chosen in the production of given bakery products.	1.D.1 Analyse the possible implications of ingredient substitution in the manufacture of bakery products.
2. Understand the processes and equipment used to manufacture bakery products.	2.1. Develop a process flow diagram for the manufacture of a given bakery product. 2.2. Explain the purpose of the main processing stages in the process flow diagram for the manufacture of the product identified in AC 2.1. 2.3. Explain the purpose of key equipment used in the process flow diagram for the manufacture of the product identified in AC 2.1.	2.M.1 Compare and contrast the difference between two process flow diagrams in relation to production methods. 2.M.2 Evaluate the impact of the differences identified in AC 2.M.1.	2.D.1 Evaluate techniques used to manufacture a given bakery product.
3. Understand quality assurance procedures for bakery products.	3.1. Explain the quality assurance procedures related to bakery product manufacture in line with relevant food industry standards.	3.M.1 Explain factors that impact the quality of bakery products.	3.D.1 Evaluate the control measures available to processors to maintain product quality taking account of the standards identified in AC 3.1.

Assessment Guidance		
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E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Fresh Produce Technology
Level	Three
Credit value	5
Guided Learning Hours (GLH)	30
OCN NI Unit Code	CBF414
Unit Reference No	M/618/7197
Unit purpose and aim(s): This unit will enable the learner to understand fresh produce production including the processes and technology used for growing, harvesting, manufacture, quality assurance, packaging, storage and distribution.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the processes and technologies used for growing and harvesting fresh fruit and vegetables.	1.1. Explain the processes and technologies for growing and harvesting fresh fruit and vegetables.		
2. Know the process of fresh produce manufacture.	2.1. Develop a production flow diagram for a given fruit or vegetable to include: a) primary process b) packing c) storage and distribution 2.2. Compare and contrast different methods and technologies associated with packaging for different types of fresh produce. 2.3. Explain the appropriate storage methods and technologies used for different types of fresh produce. 2.4. Summarise the factors which may affect the quality of fresh produce.	2.M.1 Select with justification an appropriate distribution method for given types of fresh produce.	
3. Understand quality assurance procedures and checks for fresh produce.	3.1. Critically compare quality assurance procedures and checks for three different types of fresh produce.	3.M.1 Evaluate the effectiveness of a selected quality assurance procedure for given types of fresh produce.	

4. Be able to carry out quality checks and procedures on fresh produce.	4.1. Explain the steps and technologies related to quality assurance checks and procedures and carry out checks and procedures identified in AC 3.1.		4.D.1 Evaluate primary processing steps for a given product. 4.D.2 Evaluate three internal and three external factors that influence the quality of fresh produce.

Assessment Guidance

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E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Dairy Science and Technology
Level	Three
Credit value	15
Guided Learning Hours (GLH)	90
OCN NI Unit Code	CBF415
Unit Reference No	T/618/7198
Unit purpose and aim(s): This unit will enable the learner to develop knowledge of milk production, the composition and properties of milk, operations involved in milk collection and distribution, and the processes involved in producing high quality and safe milk.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the composition and factors impacting on the quality of milk.	1.1 Explain the chemical and physiochemical properties of milk. 1.2 Summarise the factors that influence the chemical composition of milk. 1.3 Explain how microbiological contamination of milk occurs. 1.4 Explain the preventative methods for microbiological contamination in milk. 1.5 Explain the importance of ensuring safety and quality throughout all stages of the milk supply chain.	1.M.1 Analyse food safety risk factors at farm level in the dairy industry and how these can be mitigated. 1.M.2 Analyse the impact of Farm level factors that may affect the quality and quantity of milk produced.	1.D.1 Explain how the properties and quality of raw milk affects milk processing.
2. Understand milk production, collection and distribution.	2.1 Explain the main stages of on-farm milk production. 2.2 Explain the process of hygienic and efficient milk collection and distribution. 2.3 Explain how the milk supply chain is controlled and organised. 2.4 Interpret data on UK and global milk production for the last five years and describe changes in production.	2.M.1 Analyse the influence of dairy quality assurance schemes and their role in milk production, collection and distribution.	
3. Understand the processes involved in the processing of milk for different milk markets.	3.1 Explain milk processing methods for fresh liquid milk. 3.2 Explain the equipment used in fresh milk processing. 3.3 Summarise legislation relevant to milk processing.	3.M.1 Explain the purpose of a HACCP plan for milk processing. 3.M.2 Review and revise a given HACCP plan for milk processing.	

	3.4 Explain the manufacture of Extended Shelf Life (ESL), Ultra High Temperature (UHT) and Sterilised milk.		
4. Be able to understand the processes involved in the manufacture of common dairy products.	4.1 Explain the processes involved in the manufacture of common dairy products. 4.2 Develop a flow diagram of a dairy product manufacturing process, identifying CCPs and process control points. 4.3 Apply process calculations to the manufacture of a given dairy product to inform recommendations regarding yield improvements.	4.M.1 Carry out a quality audit for the manufacture of a given dairy product and make recommendations for possible improvement.	4.D.1 Evaluate the production methods used for common dairy products identified in AC 4.1.
5. Be able to carry out sampling, testing and quality assurance procedures on the production of common dairy products.	5.1 Explain the procedures involved in milk sampling. 5.2 Carry out at least four milk testing procedures. 5.3 Carry out quality assurance procedures for dairy products including: a) ingredient checks b) sampling c) storage and labelling	5.M.1 Explain how milk sampling influences the manufacture of common dairy products.	

Assessment Guidance

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E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Food Factory Design and Environmental Factors
Level	Three
Credit value	15
Guided Learning Hours (GLH)	90
OCN NI Unit Code	CBF416
Unit Reference No	A/618/7199

Unit purpose and aim(s): This unit will enable the learner to understand the production of foods from raw materials, as well as food factory and processing equipment design used in the production of safe, legal, acceptable and profitable foods. The learner will also understand the importance of minimising environmental impact and pollution prevention.

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the design requirements and service needs of food manufacturing.	1.1. Explain the following service requirements for food manufacturing: a) compressed air b) electricity, water, refrigeration systems c) waste control measures for discharge 1.2. Explain, using scale drawings, the key features of a given food manufacturing factory layout. 1.3. Explain the service needs of a given food manufacturer including the use of shift patterns to optimise food production.	1.M.1 Compare and contrast the advantages and disadvantages of the service identified in AC 1.3. 1.M.2 Evaluate the factory layout identified in AC 1.2 in order to optimise safe through-flow from intake to dispatch, identifying possible areas for improvement. 1.M.3 Compare and contrast the advantages and disadvantages of the different shift patterns.	1.D.1 Evaluate the hygiene requirements of high and low risk areas within a food manufacturing environment.
2. Know the design requirements and service needs of food processing equipment.	2.1. Explain the factors to be considered in the design and service needs of food processing equipment. 2.2. Explain the service requirement needs for a given piece of food processing equipment. 2.3. Design a flow diagram for the processing of a given food product.	2.M.1 Design a Standard Operating Procedure (SOP) for the equipment identified in AC 2.2, including health and safety considerations, and cleaning procedures.	2.D.1 Analyse the CCPs of the flow diagram designed in AC 2.3, including their impact on the quality of the final food product.

3. Understand the environmental impact of food manufacturing processes.	3.1. Summarise the following environmental impacts of food manufacturing processes: a) resource depletion b) climate change c) pollution d) statutory nuisance e) loss of biodiversity 3.2. Summarise the principles underpinning sustainability. 3.3. Compare and contrast non-renewable and renewable resources. 3.4. Explain the key requirements of waste legislation.	3.M.1 Explain the life cycle assessment and its benefits in evaluating the environmental impact of the production of food products.	3.D.1 Evaluate the environmental impact of a given food product using the life cycle identified in AC 3.M.1.
4. Understand environmental management systems (EMS) and their application within food businesses.	4.1. Explain the purpose and key elements of an EMS, including the advantages and disadvantages of implementation.	4.M.1 Compare and contrast different EMS. 4.M.2 Develop an environmental aspects and impacts review in line with an EMS for a given food business.	4.D.1 Evaluate the environmental impact of a given food business and develop an EMS implementation plan.

Assessment Guidance

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E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Food Legislation and Labelling
Level	Three
Credit value	5
Guided Learning Hours (GLH)	30
OCN NI Unit Code	CBF402
Unit Reference No	A/618/7185
Unit purpose and aim(s): This unit will enable the learner to understand food legislation, codes of practice and safety and hygiene requirements as they relate to food production.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the role of legislation within the food industry.	1.1. Explain the role of legislation within the food industry.	1.M.1 Analyse using examples the need for legislation to ensure the safe and legal production of wholesome food products.	1.D.1 Evaluate the consequences of non-compliance with food legislation and codes of practice.
2. Understand key aspects and requirements of food industry legislation and codes of practice.	2.1. Explain the key aspects and requirements of the following legislation as it applies to the food industry: a) food safety and hygiene b) food composition requirements c) weight and measures d) food product requirements e) health and safety 2.2. Summarise key aspects of the Food Law Code of Practice for Northern Ireland.	2.M.1 Evaluate how a given food production process or product meets relevant legislation and codes of practice.	
3. Understand key aspects and requirements of food and nutrition labelling legislation.	3.1. Explain key aspects and requirements of food and nutrition labelling legislation including: a) purpose b) required information	3.M.1 Analyse the importance of food labelling and nutrition labelling legislation.	3.D.1 Evaluate the consequences of non-compliance with food labelling and nutrition labelling legislation.
4. Understand how food legislation is enforced within the food industry.	4.1. Explain how food legislation is enforced within the food industry.		

Assessment Guidance		
The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.		
Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Role of a Food Technologist
Level	Three
Credit value	5
Guided Learning Hours (GLH)	30
OCN NI Unit Code	CBF403
Unit Reference No	F/618/7186

Unit purpose and aim(s): This unit will enable the learner to understand career options for food technologists.

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand career options for food technologists and their role.	1.1. Explain the role of a food technologist in different organisations. 1.2. Explain the career options which are available to a food technologist.	1.M.1 Compare and contrast the roles and responsibilities of a food technologist in at least two different organisations.	1.D.1 Evaluate the skills and knowledge required to enable career progression in the role of a food technologist.
2. Understand the skills required by Food Technologists.	2.1. Summarise the skills required by food technologists.	2.M.1 Compare own skills against those required by a successful food technologist.	2.D.1 Develop a personal development plan to address possible gaps in skills identified in AC 2.M.1.
3. Understand the relationship between food technologists and other stakeholders.	3.1. Analyse the relationships between food technologists and other internal and external stakeholders within the food production industry.		
4. Understand the role and function of the food technologist in the development and launch of food products to market.	4.1. Explain the role and function of the food technologist in the development and launch of food products to market.	4.M.1 Explain how the food technologist collaborates with key internal and external stakeholders in the launch of food products to market.	4.D.1 Evaluate the strengths and weaknesses of collaborating with stakeholders identified in AC 4.M.1 in relation to the launch of new food products to market.

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion

	learner's progression through the course	
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Food Microbiology
Level	Three
Credit value	10
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBF409
Unit Reference No	R/618/7192
Unit purpose and aim(s): This unit will enable the learner to understand food microbiology, how microorganisms cause spoilage in food products and the methods used by the food industry to preserve food commodities.	

Learning Outcomes	Assessment Criteria = Pass	Assessment Criteria = Merit	Assessment Criteria = Distinction
1. Understand the microflora of major food commodities.	1.1. Summarise the microflora of five food commodities. 1.2. Explain the common microflora and their sources for a given food commodity. 1.3. Explain the importance of microflora in the production of three food commodities.	1.M.1 Explain how microflora affect food commodities identified in AC 1.1. 1.M.2 Compare and contrast the results from the analysis of a given food commodity to an industry standards.	1.D.1 Use analysis of results in AC 1.M.2 to inform recommendations.
2. Understand food preservation processes.	2.1. Explain the action of different food preservation processes. 2.2. Explain the benefits of food preservation.	2.M.1 Justify the use of different preservation methods for given food commodities.	2.D.1 Compare and contrast the effectiveness of different preservation methods for given food commodities.
3. Understand the microbiological spoilage processes for major food commodities.	3.1. Summarise the four major indicators of food spoilage and deterioration.	3.M.1 Explain the causes of the four major indicators of spoilage outlined in AC 3.1 identifying how spoilage may be prevented.	
4. Be able to analyse food commodities using microbiological techniques.	4.1. Carry out a microbiological analysis demonstrating appropriate aseptic techniques on a given food commodity. 4.2. Carry out a dilution series on a given food commodity using: a) liquid sample b) solid sample 4.3. Carry out microbiological analysis on at least five food commodities using microbiological techniques including:	4.M.1 Use results obtained in AC 4.1 and 4.2 to calculate bacterial colonies in standard form.	4.D.1 Compare and contrast results obtained in AC 4.M.1 to inform conclusions on the microbiological quality of a given food commodity.

	a) labelling plates b) pour plates c) spread plates d) counting plates		

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
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Quality Assurance of Centre Performance

External Verification

All OCN NI recognised centres are subject to External Verification. External verification visits and monitoring activities will be conducted annually to confirm continued compliance with the conditions of recognition, review the centre's risk rating for the qualification and to assure OCN NI of the maintenance of the integrity of the qualification.

The External Verifier will review the delivery and assessment of this qualification. This will include the review of a sample of assessment evidence and evidence of the internal verification of assessment and assessment decisions. This will form the basis of the External Verification report and will inform OCN NI's annual assessment of centre compliance and risk. The External Verifier is appointed by OCN NI.

Standardisation

As a process, standardisation is designed to ensure consistency and promote good practice in understanding and the application of standards. Standardisation events:

- make qualified statements about the level of consistency in assessment across centres delivering a qualification
- make statements on the standard of evidence that is required to meet the assessment criteria for units in a qualification
- make recommendations on assessment practice
- produce advice and guidance for the assessment of units
- identify good practice in assessment and internal verification

Centres offering units of an OCN NI qualification must attend and contribute assessment materials and learner evidence for standardisation events if requested.

OCN NI will notify centres of the nature of sample evidence required for standardisation events (this will include assessment materials, learner evidence and relevant assessor and internal verifier documentation). OCN NI will make standardisation summary reports available and correspond directly with centres regarding event outcomes.

Administration

Registration

A centre must register learners within 20 working days of commencement of a qualification.

Certification

Certificates will be issued to centres within 20 working days of receipt of correctly completed results marksheets. It is the responsibility of the centre to ensure that certificates received from OCN NI are held securely and distributed to learners promptly and securely.

Charges

OCN NI publishes all up to date qualification fees in its Fees and Invoicing Policy document. Further information can be found on the centre login area of the OCN NI website.

Equality, Fairness and Inclusion

OCN NI has considered the requirements of equalities legislation in developing the specification for these qualifications. For further information and guidance relating to access to fair assessment and the OCN NI Reasonable Adjustments and Special Considerations policies, centres should refer to the OCN NI website.

Retention of Evidence

OCN NI has published guidance for centres on the retention of evidence. Details are provided in the OCN NI Centre Handbook and can be accessed via the OCN NI website.

Qualification Information

OCN NI Level 3 Extended Diploma in Food Technology and Science
Qualification Number: 603/7532/2

Operational start date: 15 May 2021
Operational end date: 30 April 2026
Certification end date: 30 April 2029

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