FDQ - Qualification Specification

FDQ number	Qualification title	Qualification number (QN)	EQF Level	Review date
261-227	FDQ Level 3 Diploma in Food Technology	600/3136/0	4	31st Jan 2027

Qualification Purpose

This qualification is designed primarily for learners who wish to develop their food technology skills and understanding to support progress to the next level of vocational learning.

Ofqual purpose B. Prepare for further learning or training and/or develop knowledge and/or skills in a subject area. Sub purpose B2. Develop knowledge and/or skills in a subject area.

Learners need to be 16 years old or over to take this qualification. Learners do not require any prior qualifications or food skills experience to take this qualification. The qualification assesses and recognises achievement within a learning environment, and does not attract points on the UCAS tariff. Assessment is by practical demonstration, assignment, written examination and is graded pass/fail. This qualification is not publicly funded within an Apprenticeship programme, therefore learners aged 24 years and over may consider an Adult Learner Loan to support learning at a Further Education College in England.

The qualification covers mandatory food technology skills and knowledge in areas including: nutrition, food biochemistry, food testing, category science (e.g. meat/dairy/baking) and food technology processes (e.g. heating/sterilising/packaging). Learners have a large choice of skills in the mandatory groups of units, including areas like: food science skills, food science knowledge and food technology. Learners may choose optional units in enterprise skills to meet their learning and development needs. See below for: (i) a complete list of units that make up the qualification and their value within the qualification and (ii) the minimum and maximum Credits and Guided Learning Hours. This qualification is listed in the Regulated Qualifications Framework, and available for provision in England, Northern Ireland and Eire.

This qualification could lead to

The qualification will support progression to further learning in:

1. subject areas including;
    - food science
    - food technology
    - food hygiene and safety
2. particular qualifications including;
    - Foundation Degree in Food Science and Technology
    - Foundation Degree in Food Nutrition
    - Foundation Degree in Food Manufacture
    - L4 Awards in Food Safety Management
3. Apprenticeships (Higher/Level 4/5) including;
    - Higher Apprenticeship in Life Sciences & Chemical Science Professionals - Level 4 and 5 (England) Pathway 6 Food Science Technologist

    These frameworks relate to technologist and management level roles including;
    - food technologist
    - product development technologist/researcher
    - quality assurance manager

This qualification is a Diploma requiring achievement of 60 credits. It is primarily designed for learners progressing into Level 4 Diploma and Level 5 Diploma/Foundation Degree learning in subject areas, qualifications and into Higher Apprenticeships listed above. The achievement of this Diploma allows sufficient breadth of development of food technology skills and enterprise skills to fully support progression into Higher Apprenticeship. A larger version of this qualification is available requiring achievement of 110 credits, and is primarily designed for learners progressing into food technology management related learning and roles.

Qualification support

This qualification has received support from the Institute of Food Science and Technology and FDQ Approved Centres including Further Education Colleges.

Further Information

Further information can be obtained from our website at: http://www.fdq.org.uk

Or by contacting FDQ:

Tel: 0113 859 1266

Email: fdq@fdq.org.uk

Assessment

Assessment is by practical demonstration, assignment, written examination and is graded pass/fail. 70% of this qualification will be internally assessed through practical and written assignments, set by the centre and agreed with FDQ. These assessments will be subject to internal quality assurance and externally quality assured by FDQ.

The remaining 30% of assessment for the qualification will also be through internally assessed examination. The questions for these examinations may be written by participating centres, set and marked by the centre and then moderated through normal QA arrangements by FDQ. Assessment requirements are set out in individual units of assessment, see exemplar *T/507/0145 Mathematics in food science.*

FDQ has in place a quality system comprising policies and procedures to ensure its qualifications are developed, delivered and remain fit for purpose. FDQ externally quality assures all centre assessment and internal quality assurance quality and arrangements.

Rules of Combination (RoC)

FDQ Level 3 Diploma in Food Technology	
Total Qualification Time (TQT)	**600 hours**
Food science skills (Group A)	Mandatory 10+ credits
Food science knowledge (Group B)	Mandatory 12+ credits
Food Technology (Group C)	Mandatory 30+ credits
Enterprise skills (Group D)	Optional 0-8 credits
Management (Group E)	Not available
Guided Learning Hours (GLH)	324 hours

List of units

Unit ref	Unit type	Unit title	Level	Credit	GLH
Group A Food science skills					
T/507/0145	VS	Mathematics in food science	3	6	40
A/507/0146	VS	Academic research skills in food science	3	2	15
F/507/0147	VS	Research skills for academic study	3	2	14

J/507/0148	VS	Statistical skills in food science	3	5	30
L/507/0149	VS	Mathematical calculations in food science	3	5	30
H/507/0142	VS	Principles of organic chemistry in food science	4	15	60
K/507/0143	VS	Principles of chemical properties and reactions	2	3	24
M/507/0144	VS	Principles of industrial process chemistry	3	12	80
M/503/0310	UK	Principles of dairy science	3	2	14
J/602/0621	UK	Principles of seafood quality science	3	4	20
R/602/4493	UK	Principles of food science	3	4	32
D/602/6277	UK	Principles of meat science	4	5	37
Group B Food science knowledge					
F/602/4490	UK	Principles of human food nutrition	3	4	31
L/602/4492	UK	Principles of a balanced diet	3	4	31
H/602/4496	UK	Principles of human biology and food conversion	3	4	35
A/602/4522	UK	Principles of yeast biology for food and drink	3	4	30
J/602/4538	UK	Principles of water functionality in food science	3	4	30
L/602/4511	UK	Principles of protein biochemistry in food science	3	4	32

K/602/4550	UK	Principles of protein functionality in food science	3	4	32
J/602/4510	UK	Principles of lipid biochemistry in food science	3	4	35
M/602/4548	UK	Principles of lipid functionality in food science	3	4	35
R/602/4509	UK	Principles of carbohydrate biochemistry in food science	3	4	32
L/602/4542	UK	Principles of carbohydrate functionality in food science	3	4	32
D/602/4514	UK	Principles of vitamin biochemistry in food science	3	4	30
R/602/4512	UK	Principles of gelatin biochemistry in food science	3	4	35
Y/602/4513	UK	Principles of mineral biochemistry in food science	4	5	30
M/602/4551	UK	Principles of mineral functionality in food science	3	4	24
Group C Food technology					
Food Technology					
D/601/9684	UK	Principles of using ICT and MIS in food technology	4	4	23
A/602/4505	UK	Principles of weights and measures in food technology	3	4	30

K/602/4516	UK	Principles of functional food additives in food technology	3	4	35
K/602/4502	UK	Principles of appearance and texture in food technology	3	3	23
M/602/4503	UK	Principles of flavours in food technology	3	4	36
T/602/4504	UK	Principles of rheological characteristics in food technology	3	4	32
A/602/4536	UK	Principles of microbiology in food technology	3	4	32
J/502/7557	UK	Principles of energy transfer in heating food technology	3	4	30
L/502/7429	UK	Principles of energy transfer in cooling food technology	3	4	28
L/502/7558	UK	Principles of the refrigeration cycle in food technology	3	4	32
F/602/4506	UK	Principles of freezing methods in food technology	3	4	30
H/602/4515	UK	Principles of pigments in food technology	4	5	40
T/602/4552	UK	Principles of cleaning raw food materials	3	3	22
A/602/4553	UK	Principles of sorting and grading produce and food materials	3	3	22
F/602/4554	UK	Principles of bulk size reduction of produce and food materials	3	4	30

J/602/4555	UK	Principles of homogenisation in food technology	3	4	30
J/502/7493	UK	Principles of centrifugation in food technology	3	3	28
H/502/7498	UK	Principles of filtration in food technology	3	4	26
R/502/7495	UK	Principles of irradiation in food technology	3	4	34
F/502/7430	UK	Principles of canning in food technology	3	4	30
L/602/4556	UK	Principles of aseptic packaging in food technology	3	3	20
L/502/7494	UK	Principles of blanching in food technology	3	3	21
M/602/3013	UK	Principles of sterile processing in food technology	3	4	30
A/502/7426	UK	Principles of the dehydration process in food technology	3	4	34
H/601/5216	UK	Principles of valves and pumps in food manufacture	2	2	16
K/601/5217	UK	Principles of plate heat exchangers in food manufacture	2	2	16
D/502/7824	UK	Principles of modified atmosphere and vacuum packaging in food technology	2	2	13
D/602/4562	UK	Principles of bar coding in food operations	3	3	20
T/602/4566	UK	Principles of food labelling in food operations	3	4	30

K/602/4564	UK	Principles of paper and board packaging in food operations	3	4	34
M/602/4565	UK	Principles of plastic and cellulose films in food and drink	3	4	34
T/502/0183	UK	The principles of food safety supervision for manufacturing	3	3	25
Y/600/2382	UK	The principles of HACCP for food manufacturing	3	3	20
K/602/4225	UK	Principles of flour in bakery	3	2	20
T/602/4230	UK	Principles of salt and dough conditioners / improvers in bakery	3	2	20
A/602/4567	UK	Principles of the Bulk Fermentation Process	3	2	20
F/602/4182	UK	Principles of the Chorleywood bread process	3	2	20
F/602/4568	UK	Principles of Mechanical Dough Development (MDD) using spiral mixing	3	2	20
F/602/4196	UK	Principles of dough fermentation and process control	3	2	20
K/602/4192	UK	Principles of retarding and proving dough and process control	3	2	20
K/602/4211	UK	Principles of oven baking bakery products	3	2	20
K/602/4712	UK	Principles of mixing flour confectionery and process control	3	2	20

L/503/0315	UK	Principles of producing butter and mixed fat spreads	3	2	15
H/503/0305	UK	Principles of ice cream production	3	2	14
J/503/0314	UK	Principles of fermented dairy products	3	2	16
F/503/0313	UK	Principles of cheese making	3	3	23
M/602/0614	UK	Principles of fish or shellfish smoking	3	4	21
D/602/0625	UK	Principles of brining and salting fish or shellfish	3	2	13
H/503/1602	UK	Principles of fresh produce ripening	3	4	31
F/503/1610	UK	Principles of fresh produce handling and quality	3	3	23
T/503/1622	UK	Principles of the fresh produce handling systems	3	3	18
A/503/1623	UK	Principles of fresh produce packaging and preservation	3	4	26
F/502/8058	UK	Principles of curing meat	3	3	22
R/602/6227	UK	Principles of microbiology and parasitology in meat production	4	3	24
D/602/6229	UK	Principles of anatomy and physiology of meat species	4	5	37
Y/602/6276	UK	Principles of pathology of meat species	4	5	37
T/502/8008	UK	Principles of technology in meat processing	3	3	21

H/502/7825	UK	Principles of animal waste and by-product removal and processing of edible co-products	3	3	24
A/602/6397	UK	Principles of wheat plants, grain production and storage	3	4	32
F/602/6398	UK	Principles of screenroom processes in milling	3	4	32
T/602/6401	UK	Principles of the break system in flour milling	3	5	32
J/602/6399	UK	Principles of the scratch system in flour milling	3	4	26
A/602/6402	UK	Principles of the reduction system in flour milling	3	4	24
Y/602/6407	UK	Principles of flour packing, storage and despatch in milling	3	4	24
D/602/6408	UK	Principles of bulk handling grain and flour in milling	3	4	22
T/502/7425	UK	Principles of the feed pelleting system in flour milling	3	4	26
J/601/5208	UK	Principles of brewhouse processes in brewing	2	2	7
F/601/5210	UK	Principles of fermentation in brewing	2	3	8
L/601/5209	UK	Principles of conditioning and filtration in brewing	2	2	7
R/601/5213	UK	Principles of centrifugation in brewing	2	2	16
T/601/5219	UK	Principles of filtration in brewing	2	2	16

K/601/5220	UK	Principles of extractions and distillation	2	2	16
M/601/5221	UK	Principles of evaporation in brewing	2	1	8
T/601/5222	UK	Principles of cider maturation and blending	2	1	9
A/601/5223	UK	Principles of cream liqueur production	2	1	8
F/601/5224	UK	Principles of juice storage and cider fermentation	2	3	24
Testing and analysis					
Y/502/7496	UK	Principles of sensory assessment in food technology	3	3	22
H/602/4501	UK	Principles of food data analysis in food and drink	3	4	30
F/602/6403	UK	Principles of wheat and wheat flour laboratory testing	3	5	36
M/602/0628	UK	Principles of fish or shellfish quality assessment	3	3	14
Group D Enterprise units					
L/504/4098	UK	Principles of creating a vision for food business	3	2	16
A/504/4100	UK	Principles of developing a food business idea	3	2	15
A/504/4095	UK	Principles of exploring food business motives	3	2	15
J/504/4102	UK	Principles of keeping financial records in food business	3	4	28

H/504/4110	UK	Principles of keeping up to date with legislation in food business	3	2	12
J/504/4097	UK	Principles of carrying out banking for food business	3	3	22
L/504/4103	UK	Principles of implementing plans in food business	3	3	23
F/504/4101	UK	Principles of choosing supplies and suppliers for food business	3	3	24
R/504/4104	UK	Principles of planning to sell food business products or services	3	2	14
Y/504/4105	UK	Principles of planning the marketing of food business products or services	3	3	23
D/504/4106	UK	Principles of managing succession in food business	3	2	16
K/504/4108	UK	Principles of improving the quality of food business products or services	3	3	24
M/504/4109	UK	Principles of investing capital in food business	3	3	23
K/504/4111	UK	Principles of making food business presentations	3	1	9
M/504/4093	UK	Principles of deciding on a food business location	3	3	23
T/504/4094	UK	Principles of establishing customer needs in food business	3	3	24
F/504/4096	UK	Principles bidding for work in food business	3	3	23

Group E Management					
Food Management					
Y/601/9683	UK	Principles of food policy and regulation	4	5	36
L/601/2701	UK	Principles of sustainability in food operations	3	4	34
A/601/9689	UK	Principles of change project management in food operations	4	4	35
D/602/4058	UK	Principles of engineering maintenance in food operations	3	3	19
M/602/4064	UK	Principles of resource and financial control in food operations	3	2	17
J/602/4054	UK	Principles of effective communication in food operations	3	2	11
L/507/0152	UK	Principles of human resource management in food business	3	10	60
D/602/4044	UK	Principles of monitoring and assessing risks in food operations	3	2	13
L/602/3987	UK	Principles of quality sampling and testing in food operations	3	3	18
A/601/2953	UK	Principles of improvement in food operations	3	3	16
F/601/2954	UK	Principles of continuous improvement techniques (Kaizen) in food operations	3	3	15
K/601/2978	UK	Principles of Six Sigma methodology in food operations	3	3	17

M/601/2979	UK	Principles of Six Sigma metrics in food operations	3	4	22
Product development					
T/602/4034	UK	Principles of quality in food operations	3	3	18
L/602/4038	UK	Principles of product development in food operations	3	4	31
F/507/0150	VS	Carry out market research in food business	3	4	24
J/507/0151	VS	Research and report information in food business	3	4	36

Exemplar unit of assessment

Title	Mathematics in food science				
Ofqual unit ref	T/507/0145				
Level	3	Credit value	6	GLH	40
Learning outcomes		**Assessment criteria**			
The learner will:		**The learner can:**			
1. Understand numerical approximations and unit conversion tables		1.1 Calculate numbers to specified figures or decimal places 1.2 Calculate approximations and estimations 1.3 Construct mathematical tables.			
2. Calculate areas, volumes and flow rates		2.1 Calculate areas of shapes 2.2 Calculate volumes 2.3 Calculate flow rates.			

3. Understand statistical data	3.1 Extract data from practical work or technical publications 3.2 Interpret data sources 3.3 Tally diagrams 3.4 Describe the differences between samples and populations 3.5 Define frequencies and relative frequencies 3.6 Interpret data summarised in tables, charts and diagrams.
4. Apply the basic rules of algebra to solve problems	4.1 State rules of indices 4.2 Evaluate numerical expressions containing combined positive, negative and fractional indices 4.3 Convert numbers to standard forms 4.4 Apply addition, subtraction, multiplication and division to numbers in standard forms