The Further Education and Training Awards Council (FETAC) was set up as a statutory body on 11 June 2001 by the Minister for Education and Science. Under the Qualifications (Education & Training) Act, 1999, FETAC now has responsibility for making awards previously made by NCVA.

Module Descriptor

Food Processing

Level 5 C20024

www.fetac.ie
# Level 5 Module Descriptor

## Summary of Contents

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<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>Describes how the module functions as part of the national vocational certificate framework.</td>
</tr>
<tr>
<td>Module Title</td>
<td>Indicates the module content. This title appears on the learner’s certificate. It can be used to download the module from the website <a href="http://www.fetac.ie">www.fetac.ie</a>.</td>
</tr>
<tr>
<td>Module Code</td>
<td>An individual code is assigned to each module; a letter at the beginning denotes a vocational or general studies area under which the module is grouped and the first digit denotes its level within the national vocational certificate framework.</td>
</tr>
<tr>
<td>Level</td>
<td>Indicates where the module is placed in the national vocational certificate framework, from Level 3 to Level 6.</td>
</tr>
<tr>
<td>Credit Value</td>
<td>Denotes the amount of credit that a learner accumulates on achievement of the module.</td>
</tr>
<tr>
<td>Purpose</td>
<td>Describes in summary what the learner will achieve on successfully completing the module and in what learning and vocational contexts the module has been developed. Where relevant, it lists what certification will be awarded by other certification agencies.</td>
</tr>
<tr>
<td>Preferred Entry Level</td>
<td>Recommends the level of previous achievement or experience of the learner.</td>
</tr>
<tr>
<td>Special Requirements</td>
<td>Usually ‘none’ but in some cases detail is provided here of specific learner or course provider requirements. There may also be reference to the minimum safety or skill requirements that learners must achieve prior to assessment.</td>
</tr>
<tr>
<td>General Aims</td>
<td>Describe in 3-5 statements the broad skills and knowledge learners will have achieved on successful completion of the module.</td>
</tr>
<tr>
<td>Units</td>
<td>Structure the learning outcomes; there may be no units.</td>
</tr>
<tr>
<td>Specific Learning Outcomes</td>
<td>Describe in specific terms the knowledge and skills that learners will have achieved on successful completion of the module.</td>
</tr>
<tr>
<td>Portfolio of Assessment</td>
<td>Provides details on how the learning outcomes are to be assessed.</td>
</tr>
<tr>
<td>Grading</td>
<td>Provides details of the grading system used.</td>
</tr>
<tr>
<td>Individual Candidate</td>
<td>List the assessment criteria for each assessment technique and the marking system.</td>
</tr>
<tr>
<td>Marking Sheets</td>
<td></td>
</tr>
<tr>
<td>Module Results Summary Sheet</td>
<td>Records the marks for each candidate in each assessment technique and in total. It is an important record for centres of their candidate’s achievements.</td>
</tr>
<tr>
<td>Appendices</td>
<td>Can include approval forms for national governing bodies.</td>
</tr>
<tr>
<td>Glossary of Assessment</td>
<td>Explains the types of assessment techniques used to assess standards.</td>
</tr>
<tr>
<td>Techniques</td>
<td></td>
</tr>
<tr>
<td>Assessment Principles</td>
<td>Describes the assessment principles that underpin FETAC approach to assessment.</td>
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</table>
Introduction

A module is a statement of the standards to be achieved to gain a FETAC award. Candidates are assessed to establish whether they have achieved the required standards. Credit is awarded for each module successfully completed.

The standards in a module are expressed principally in terms of specific learning outcomes, i.e. what the learner will be able to do on successful completion of the module. The other elements of the module - the purpose, general aims, assessment details and assessment criteria - combine with the learning outcomes to state the standards in a holistic way.

While FETAC is responsible for setting the standards for certification in partnership with course providers and industry, it is the course providers who are responsible for the design of the learning programmes. The duration, content and delivery of learning programmes should be appropriate to the learners’ needs and interests, and should enable the learners to reach the standard as described in the modules. Modules may be delivered alone or integrated with other modules.

The development of learners’ core skills is a key objective of vocational education and training. The opportunity to develop these skills may arise through a single module or a range of modules. The core skills include:

- taking initiative
- taking responsibility for one’s own learning and progress
- problem solving
- applying theoretical knowledge in practical contexts
- being numerate and literate
- having information and communication technology skills
- sourcing and organising information effectively
- listening effectively
- communicating orally and in writing
- working effectively in group situations
- understanding health and safety issues
- reflecting on and evaluating quality of own learning and achievement.

Course providers are encouraged to design programmes which enable learners to develop core skills.
1 Module Title Food Processing

2 Module Code C20024

3 Level 5

4 Credit Value 1 credit

5 Purpose This module is designed to provide the learner with the knowledge and skills associated with the processes used in the food industry.

This is a mandatory vocational module on the Level 5 Certificate in Applied Science – Food award.

6 Preferred Entry Level Level 4 Certificate, Leaving Certificate or equivalent qualifications and/or relevant life and work experiences.

7 Special Requirements None.

8 General Aims

Learners who successfully complete this module will:

8.1 appreciate the importance of the food processing industry to the Irish economy

8.2 understand and be familiar with a range of processing techniques used in the food processing industry

8.3 appreciate the importance of hygiene in food processing

8.4 plan and execute food processing operations for a range of foods

8.5 develop safe working practices

8.6 acquire skills in sensory evaluation.

9 Units The specific learning outcomes are grouped into 8 units.

Unit 1 Milk Processing
Unit 2 Butter, Dairy Spreads and Low-Fat Spreads
Unit 3 Cheese
Unit 4 Yoghurt
Unit 5 Cereals and Breads
Unit 6 Beverages
Unit 7 Meats
Unit 8 Health and Safety
10 Specific Learning Outcomes

Unit 1 Milk Processing

Learners should be able to:

10.1.1 outline the composition of whole milk
10.1.2 state the composition of different types of milk e.g. full milk, low fat milk, skimmed milk, dried milk, UHT milk
10.1.3 identify by taste different types of milk
10.1.4 identify by taste at least 3 of these products – kefir, quarg, ghee, lactic butters, unsalted butter
10.1.5 state the difference between 2 types of cream, such as single cream, double cream, whipping cream
10.1.6 explain the following as applied to milk processing: pasteurisation, homogenisation and separation
10.1.7 pasteurise milk
10.1.8 homogenise milk
10.1.9 separate milk into different fractions
10.1.10 state the temperature and pressures involved in these processes.

Unit 2 Butter, Dairy Spreads and Low-Fat Spreads

Learners should be able to:

10.2.1 state the legal composition of butter
10.2.2 make butter
10.2.3 explain the difference between butter, dairy spreads and low-fat spreads
10.2.4 list the composition of a dairy spread
10.2.5 list the composition of a non-dairy low-fat spread
10.2.6 list and explain the functions of the additives used in producing low-fat spreads
10.2.7 participate in a taste panel to appreciate the tastes of different butters and spreads.
Unit 3  Cheese

Learners should be able to:

10.3.1 list and identify at least 5 different types of cheese
10.3.2 classify traditional cheeses into soft/hard, fresh/mature
10.3.3 outline the role of a starter culture in cheese making
10.3.4 outline the role of rennet in cheese making
10.3.5 explain the role of the maturing process in cheese making
10.3.6 define the following terms in relation to cheese making:
   • proteolysis
   • lipolysis
   • starter culture
   • ripening
   • curd
   • rennet
   • whey curd contraction
10.3.7 make a batch of cheese
10.3.8 participate in taste panels to classify cheeses.

Unit 4  Yoghurt

Learners should be able to:

10.4.1 list and identify at least 3 different types of yoghurt commonly available
10.4.2 define the terms bio, live culture, and acidity as they relate to yoghurt
10.4.3 explain the role of a starter culture in yoghurt production
10.4.4 explain the importance of pH as a controlling parameter in yoghurt production
10.4.5 make a batch of yoghurt
10.4.6 use sensory and laboratory techniques to distinguish between different yoghurts and fromage frais products.
Unit 5  Cereals and Breads

Learners should be able to:

10.5.1 explain, with the aid of a flow chart, a milling process
10.5.2 explain the use of rollers, nip, break roll, hammer mills, sifting, aspirating, blending in relation to milling
10.5.3 define the terms: starch factor and gelling ability
10.5.4 outline the factors that decide the suitability of different types of wheat for milling
10.5.5 outline the process used in the production of a range of commercially available cereals
10.5.6 list seven different cereals, state their sources and products in which they are used
10.5.7 draw a diagram of a wheat grain showing husk, embryo and endosperm
10.5.8 distinguish between the composition of different flours such as: white, brown, whole grain
10.5.9 outline the role of yeast in bread making
10.5.10 outline the role of gluten in bread making
10.5.11 explain the importance of gas production and the alternative means of producing gas in breads
10.5.12 list and explain the function of the additives used in flour and bread making
10.5.13 make yeast bread
10.5.14 make soda bread.

Unit 6  Beverages

Learners should be able to:

10.6.1 list the ingredients and equipment used in wine making
10.6.2 outline the role of yeast in wine making
10.6.3 explain the following terms as they relate to wine making:

- grape
- grape juice
- must
- fermentation
- aerobic
- anaerobic
- sediment
- fines
10.6.4 make a wine
10.6.5 outline how a beer is made and list the ingredients that are used
10.6.6 draw a flow chart of the brewing process for ales and stouts
10.6.7 describe the malting process in detail
10.6.8 explain the role of yeast in brewing
10.6.9 describe the process of soft drinks manufacturing
10.6.10 list the ingredients required for soft drink production
10.6.11 explain the following required for soft drink production:
   • carbonation
   • concentrate
   • water quality
   • carbon filter
   • sweetness
   • pressurised containers
10.6.12 explain the carbonated process in soft drink manufacture.

Unit 7 Meats

Learners should be able to:

10.7.1 draw the structure of muscle
10.7.2 outline the mechanism of slaughter of different animals such as poultry, cattle and sheep
10.7.3 outline the changes that occur in muscle post-mortem
10.7.4 explain how post slaughter treatment affects meat quality
10.7.5 list the carcass composition of three different animals
10.7.6 recognise the different cuts of meat and list, giving reasons, the cooking method most suitable for each cut
10.7.7 explain the significance of the following terms in relation to meat:
   • rigor
   • pH
   • post-mortem
   • myoglobin
   • actin
   • myosin
   • shortening
   • aitch-bone hanging
   • D.E.D.
   • P.S.E.
10.7.8 describe the most commonly used methods for curing meats or fish such as those used in corned beef, bacon salting and smoking

10.7.9 cure a meat or a fish sample

10.7.10 match the finished cured meat/fish product with the curing technique used.

Unit 8 Health and Safety

Learners should be able to:

10.8.1 identify the adverse physical, chemical, biological and psychological effects of common hazards on the human body

10.8.2 recognise common hazard symbols and labels

10.8.3 know the rights and responsibilities of employers and employees as specified in the Safety, Health and Welfare at Work Act 1989.

11 Portfolio of Assessment

Please refer to the glossary of assessment techniques and the note on assessment principles at the end of this module descriptor.

All assessment is carried out in accordance with FETAC regulations.

Assessment is devised by the internal assessor, with external moderation by FETAC.

Summary

<table>
<thead>
<tr>
<th>Skills Demonstration</th>
<th>60%</th>
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</thead>
<tbody>
<tr>
<td>Examination (Theory-Based)</td>
<td>40%</td>
</tr>
</tbody>
</table>

11.1 Skills Demonstration

In one or more skills demonstrations, candidates will be observed carrying out at least 3 practical tasks from the following list:

1. performing a pasteurization
2. making butter
3. making a batch of cheese
4. making yoghurt
5. making yeast bread
6. making wine/beer
7. curing a meat or fish sample.

Candidates will demonstrate adherence to safe working practices throughout the skills demonstration.
Candidates will submit supporting evidence for each practical task completed. The evidence can be presented as written, oral, graphic, visual or a combination of these.

The tasks can be assessed at any time throughout the learning process.

11.2 Examination

The internal assessor will devise a theory-based examination that assesses the candidate’s ability to recall and apply theory and understanding, requiring responses to a range of question types, short answer and structured. These questions may be answered in different media such as in writing or orally.

The examination will be based on a range of specific learning outcomes and will be 2 hours in duration.

The format of the examination will be as follows:

Section A
12 short answer questions.
Candidates are required to answer 10 (4 marks each).

Section B
3 structured questions – not more than 1 question per unit.
Candidates are required to answer 2 (20 marks each).

12 Grading

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Pass</td>
<td>50 - 64%</td>
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<tr>
<td>Merit</td>
<td>65 - 79%</td>
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<tr>
<td>Distinction</td>
<td>80 - 100%</td>
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</tbody>
</table>
Candidate Name: ______________________________  PPSN: __________________________

Centre: _________________________________________________  Centre No.: ___________

<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>Maximum Mark</th>
<th>Candidate Mark</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• appropriate preparation and planning of task</td>
<td>5</td>
<td>Task 1</td>
<td>Task 2</td>
</tr>
<tr>
<td>• effective execution of task demonstrating mastery of tools and techniques</td>
<td>15</td>
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<td>• excellent quality of product</td>
<td>15</td>
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<tr>
<td>• safe use and careful maintenance of tools and equipment</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td><strong>40</strong></td>
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<tr>
<td><strong>TOTAL MARKS</strong></td>
<td><strong>120</strong></td>
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</tbody>
</table>

*This mark should be transferred to the Module Results Summary Sheet*

Internal Assessor’s Signature: ______________________________ Date: ____________

External Authenticator’s Signature: ______________________________ Date: ____________
<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>Maximum Mark</th>
<th>Candidate Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section A: short answer questions</strong></td>
<td></td>
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<tr>
<td>12 short answer questions, answer any 10 (4 marks each)</td>
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<tr>
<td>(Indicate questions answered)</td>
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<tr>
<td>Question No.:*</td>
<td>4</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>40</td>
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<tr>
<td><strong>Section B: structured questions</strong></td>
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<tr>
<td>3 structured questions, answer any 2 (20 marks each)</td>
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<td></td>
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<tr>
<td>(Indicate questions answered)</td>
<td></td>
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</tr>
<tr>
<td>Question No.:*</td>
<td>20</td>
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<tr>
<td>_____</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>40</td>
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</tr>
<tr>
<td><strong>TOTAL MARKS</strong></td>
<td>80</td>
<td></td>
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</tbody>
</table>

* The internal assessor is required to enter here the question numbers answered by the candidate.
### FETAC Module Results Summary Sheet

**Module Title:** Food Processing  
**Module Code:** C20024

<table>
<thead>
<tr>
<th>Candidate Surname</th>
<th>Candidate Forename</th>
<th>Mark Sheet 1 (120)</th>
<th>Mark Sheet 2 (80)</th>
<th>Total Marks (200)</th>
<th>Total ÷ 2 (100%)</th>
<th>Grade*</th>
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<tbody>
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**Maximun Marks per Marking Sheet:**

- Mark Sheet 1: 120
- Mark Sheet 2: 80
- Total Marks: 200
- Total ÷ 2: 100%

**Grade*:**

- D: 80 - 100%
- M: 65 - 79%
- P: 50 - 64%
- U: 0 - 49%
- W: candidates entered who did not present for assessment

---

**Signed:**  
**Internal Assessor:** ________________________________  **Date:** _____________________________

This sheet is for internal assessors to record the overall marks of individual candidates. It should be retained in the centre. The marks awarded should be transferred to the official FETAC Module Results Sheet issued to centres before the visit of the external Authenticator.
Glossary of Assessment Techniques

Assignment

An exercise carried out in response to a brief with specific guidelines and usually of short duration.

Each assignment is based on a brief provided by the internal assessor. The brief includes specific guidelines for candidates. The assignment is carried out over a period of time specified by the internal assessor.

Assignments may be specified as an oral presentation, case study, observations, or have a detailed title such as audition piece, health fitness plan or vocational area profile.

Collection of Work

A collection and/or selection of pieces of work produced by candidates over a period of time that demonstrates the mastery of skills.

Using guidelines provided by the internal assessor, candidates compile a collection of their own work. The collection of work demonstrates evidence of a range of specific learning outcomes or skills. The evidence may be produced in a range of conditions, such as in the learning environment, in a role play exercise, or in real-life/work situations.

This body of work may be self-generated rather than carried out in response to a specific assignment eg art work, engineering work etc.

Examination

A means of assessing a candidate’s ability to recall and apply skills, knowledge and understanding within a set period of time (time constrained) and under clearly specified conditions.

Examinations may be:

- practical, assessing the mastery of specified practical skills demonstrated in a set period of time under restricted conditions
- oral, testing ability to speak effectively in the vernacular or other languages
- interview-style, assessing learning through verbal questioning, on one-to-one/group basis
- aural, testing listening and interpretation skills
- theory-based, assessing the candidate’s ability to recall and apply theory, requiring responses to a range of question types, such as objective, short answer, structured, essay. These questions may be answered in different media such as in writing, orally etc.

Learner Record

A self-reported record by an individual, in which he/she describes specific learning experiences, activities, responses, skills acquired.

Candidates compile a personal logbook/journal/diary/daily diary/record/laboratory notebook/sketch book.

The logbook/journal/diary/daily diary/record/laboratory notebook/sketch book should cover specified aspects of the learner’s experience.
Project

A substantial individual or group response to a brief with guidelines, usually carried out over a period of time.

Projects may involve:

- research – requiring individual/group investigation of a topic
- process – eg design, performance, production of an artefact/event

Projects will be based on a brief provided by the internal assessor or negotiated by the candidate with the internal assessor. The brief will include broad guidelines for the candidate. The work will be carried out over a specified period of time.

Projects may be undertaken as a group or collaborative project, however the individual contribution of each candidate must be clearly identified.

The project will enable the candidate to demonstrate: *(some of these – about 2-4)*

- understanding and application of concepts in (specify area)
- use/selection of relevant research/survey techniques, sources of information, referencing, bibliography
- ability to analyse, evaluate, draw conclusions, make recommendations
- understanding of process/planning implementation and review skills/planning and time management skills
- ability to implement/produce/make/construct/perform
- mastery of tools and techniques
- design/creativity/problem-solving/evaluation skills
- presentation/display skills
- team working/co-operation/participation skills.

Skills Demonstration

Assessment of mastery of specified practical, organisational and/or interpersonal skills.

These skills are assessed at any time throughout the learning process by the internal assessor/another qualified person in the centre for whom the candidate undertakes relevant tasks.

The skills may be demonstrated in a range of conditions, such as in the learning environment, in a role-play exercise, or in a real-life/work situations.

The candidate may submit a written report/supporting documentation as part of the assessment.

Examples of skills: laboratory skills, computer skills, coaching skills, interpersonal skills.
FETAC Assessment Principles

1. Assessment is regarded as an integral part of the learning process.

2. All FETAC assessment is criterion referenced. Each assessment technique has assessment criteria which detail the range of marks to be awarded for specific standards of knowledge, skills and competence demonstrated by candidates.

3. The mode of assessment is generally local i.e. the assessment techniques are devised and implemented by internal assessors in centres.

4. Assessment techniques in FETAC modules are valid in that they test a range of appropriate learning outcomes.

5. The reliability of assessment techniques is facilitated by providing support for assessors.

6. Arising from an extensive consultation process, each FETAC module describes what is considered to be an optimum approach to assessment. When the necessary procedures are in place, it will be possible for assessors to use other forms of assessment, provided they are demonstrated to be valid and reliable.

7. To enable all learners to demonstrate that they have reached the required standard, candidate evidence may be submitted in written, oral, visual, multimedia or other format as appropriate to the learning outcomes.

8. Assessment of a number of modules may be integrated, provided the separate criteria for each module are met.

9. Group or team work may form part of the assessment of a module, provided each candidate’s achievement is separately assessed.