



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **FDF40311 Certificate IV in Food Science and Technology**

**Release 3**

## **FDF40311 Certificate IV in Food Science and Technology**

### **Modification History**

September 2012: Replacement of superseded imported Units.

April 2012: Minor typographical corrections.

## Description

This Qualification provides a senior technical level occupational outcome in food processing and supporting functions and covers a range of food related industries including but not limited to:

- general food processing
- meat
- seafood
- poultry including chicken meat and egg processing
- dairy processing
- confectionery
- beverages
- baking and cereals.

### Job roles

This Qualification targets those working in technical and supervisory roles covering product development, food safety and quality, food production and distribution, environmental functions, and the maintenance and monitoring of food processing systems. The job role requires technical skills and knowledge in the science and technology that support food processing.

Job titles may include:

- food technologist
- production line manager
- quality systems coordinator
- food safety systems officer
- product development team member
- processing systems coordinator
- environmental systems officer (food processing).

### Additional Qualification advice

Units selected from other Training Packages must be relevant to the work outcome, local industry requirements and the Qualification level.

Note: AgriFood Skills Australia expects that the design of any training delivery and assessment program to support the achievement of this Qualification is based on:

- the context required by the industry and/or enterprise
- a holistic and integrated training delivery and assessment plan that identifies learning activities and evidence required
- flexible delivery options including on-the-job and work-based training that support the development of competency.

## **Pathways Information**

### **Pathways into the Qualification**

Pathways for candidates considering this Qualification include:

- direct entry
- relevant vocational training and/or work experience.

### **Pathways from the Qualification**

After achieving this Qualification, candidates may undertake FDF50311 Diploma of Food Science and Technology.

## **Licensing/Regulatory Information**

There is no direct link between this Qualification and licensing, legislative and/or regulatory requirements. However, all work must comply with food safety, occupational health and safety (OHS) and environmental regulations and legislation that apply to the workplace.

## **Entry Requirements**

Not applicable.

## Employability Skills Summary

Employability Skill	Industry/enterprise requirements for this Qualification include:
Communication	<ul style="list-style-type: none"> <li>• Complete workplace documentation and records.</li> <li>• Use a range of communication technologies to support work operations.</li> <li>• Develop work instructions, specifications and procedures.</li> <li>• Demonstrate effective and appropriate communication and interpersonal skills when dealing with people.</li> <li>• Communicate with all team members in a professional manner.</li> <li>• Demonstrate effective and appropriate documentation, communication and interpersonal skills when dealing with internal and external clients.</li> <li>• Use most appropriate communication method given priority, cost and audience needs.</li> <li>• Access, interpret and apply technical information.</li> <li>• Use written materials and personal presentations to convey information.</li> </ul>
Teamwork	<ul style="list-style-type: none"> <li>• Work cooperatively with people of different ages, gender, race or religion.</li> <li>• Liaise with and provide support to other team members.</li> <li>• Demonstrate leadership skills.</li> <li>• Identify and manage performance required to meet internal and external customer needs in own work and team work.</li> <li>• Manage organisational processes and provide problem solving support to others.</li> <li>• Contribute to team efforts in solving problems and making changes.</li> </ul>
Problem solving	<ul style="list-style-type: none"> <li>• Investigate problem causes.</li> <li>• Identify, rectify or report potential and actual problems associated with work operations.</li> <li>• Identify factors which may affect the product or service to be provided.</li> <li>• Use material and process knowledge to solve problems.</li> <li>• Identify hazards and suggest control measures.</li> <li>• Monitor food safety practices and resolve issues.</li> <li>• Implement food safety procedures in the workplace.</li> <li>• Analyse data and information to determine implications for work operations.</li> <li>• Demonstrate a systematic approach to problem solving.</li> </ul>
Initiative and enterprise	<ul style="list-style-type: none"> <li>• Gather and analyse feedback on products, processes and procedures.</li> </ul>

	<ul style="list-style-type: none"> <li>• Assess quality and other indicators of products.</li> <li>• Source information to provide background to decision making.</li> <li>• Support achievement of efficient production processes.</li> <li>• Determine and act on situations requiring further information or problem solving.</li> <li>• Assist in the implementation of continuous improvement processes.</li> <li>• Provide leadership in the workplace.</li> </ul>
Planning and organising	<ul style="list-style-type: none"> <li>• Identify hazards and implement appropriate hazard control measures.</li> <li>• Demonstrate time management skills.</li> <li>• Source and prepare materials and resources and ensure availability to support work operations.</li> <li>• Schedule and sequence work to maximise safety and productivity.</li> <li>• Plan for production and organise processing through a knowledge of process control.</li> <li>• Plan and organise the collection of data.</li> <li>• Optimise work processes.</li> </ul>
Self-management	<ul style="list-style-type: none"> <li>• Interpret and apply relevant acts and regulations.</li> <li>• Keep the work area clean and tidy at all times.</li> <li>• Monitor own work and work of team and identify and act on any quality issues.</li> <li>• Manage own time to meet deadlines.</li> <li>• Implement and monitor workplace procedures and instructions.</li> <li>• Manage work time to incorporate investigations, data collection and reporting into work flow.</li> </ul>
Learning	<ul style="list-style-type: none"> <li>• Implement learning activities as appropriate to ensure achievement of specified work requirements.</li> <li>• Be supportive, assertive and use interpersonal skills to encourage workplace learning.</li> <li>• Identify own training needs and seek skill development if required.</li> <li>• Gather feedback to own work to assess effectiveness in meeting objectives and integrate information into own practice.</li> <li>• Assess work data and information to identify areas for improved performance.</li> <li>• Maintain currency of industry skills and knowledge.</li> <li>• Maintain technical knowledge through reading, research and professional conversations.</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Select and use computer software applications to support research, analysis of findings and reporting.</li> <li>• Work with machines and workplace technology safely and</li> </ul>

	<p>according to workplace standards.</p> <ul style="list-style-type: none"><li>• Help others use technology efficiently and safely.</li><li>• Ensure readiness and operational efficiency of workplace technology.</li><li>• Apply high-level technical skills in chemical and biological analysis techniques.</li><li>• Integrate technology into existing production processes.</li></ul>
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## Packaging Rules

This Qualification requires the achievement of **twenty (20)** Units of Competency in accordance with the following rules.

**Total Units must include a minimum of twelve (12) Units coded FDF or MTM.**

**Twelve (12) Core Units**

**Eight (8) Elective Units**

**Elective selection must include:**

- Three (3) elective Units from Group A
- Two (2) elective Units from Groups A or B.

**Three (3) remaining elective Units may be selected from:**

- Group A elective Units below, not previously selected
- Group B elective Units below, not previously selected
- A maximum of 3 Units from any nationally endorsed Training Package or accredited course that are packaged at Certificate III level, Certificate IV level or Diploma level.

NOTE: Units marked with an asterisk (\*) require completion of prerequisite Unit/s which is identified under the Unit.

## CORE UNITS

Complete all twelve (12) core Units.

FDFFS2001A	Implement the food safety program and procedures
FDFFS3001A	Monitor the implementation of quality and food safety programs* <i>FDFFS2001A Implement the food safety program and procedures</i>
FDFFS4001A	Supervise and maintain a food safety plan
FDFST4002A	Monitor the development and implementation of a food QA system
FDFST4004A	Perform microbiological procedures in the food industry
FDFST4007A	Establish operational requirements for a food processing enterprise
FDFOHS4002A	Maintain OHS processes
FDFOP2015A	Apply principle of statistical process control* <i>FDFOP2061A Use numerical applications in the workplace</i>
FDFTEC4003A	Control food contamination and spoilage*



	<i>FDFFS3001A Monitor the implementation of quality and food safety programs*</i> <i>FDFFS2001A Implement the food safety program and procedures</i>
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FDFTEC4007A	Describe and analyse data using mathematical principles* <i>FDFOP2015A Apply principle of statistical process control*</i> <i>FDFOP2061A Use numerical applications in the workplace</i>
MSAENV472B	Implement and monitor environmentally sustainable work practices
MSL974003A	Perform chemical tests and procedures

## GROUP A: TECHNICAL ELECTIVES

Select a minimum of three (3) elective Units from Group A.

### Scientific principles and laboratory operations

MSL974004A	Perform food tests
FDFOP2061A	Use numerical applications in the workplace
FDFST4010A	Apply sensory analysis in food processing
FDFST4011A	Apply the principles of nutrition to food processing
FDFTEC4009A	Identify the physical and chemical properties of materials, food and related products

### Food quality and safety

FDFAU4001A	Assess compliance with food safety programs
FDFAU4002A	Communicate and negotiate to conduct food safety audits
FDFAU4003A	Conduct food safety audits
FDFAU4004A	Identify, evaluate and control food safety hazards
FDFFS4002A	Supervise and verify supporting programs for food safety

### Food processing

FDFST4001A	Apply food processing technologies
FDFST4003A	Apply digital technology in food processing
FDFST4005A	Document processes and procedures for a food product
FDFST4006A	Apply food preservation technologies

**Manufacturing systems**

FDFPPL4005A	Establish process capability* <i>FDFOP2015A Apply principle of statistical process control*</i> <i>FDFOP2061A Use numerical applications in the workplace</i> <i>FDFTEC4007A Describe and analyse data using mathematical principles</i>
FDFTEC4002A	Manage controlled atmosphere storage
FDFTEC4004A	Apply basic engineering principles to food processing* <i>FDFOP2030A Operate a process control interface</i> <i>FDFTEC4007A Describe and analyse data using mathematical principles*</i> <i>FDFOP2015A Apply principle of statistical process control*</i> <i>FDFOP2061A Use numerical applications in the workplace</i>
FDFTEC4011A	Participate in product recalls* <i>FDFFS3001A Monitor the implementation of quality and food safety programs*</i> <i>FDFFS2001A Implement the food safety program and procedures</i>
MSS402080A	Undertake root cause analysis
MSS403010A	Facilitate change in an organisation implementing competitive systems and practice
MSS403013A	Lead team culture improvement
MSAPMOPS401A	Trial new process or product
MSAPMSUP390A	Use structured problem solving tools

**Environment**

FDFST4012A	Apply water management principles to the food industry
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**Packaging and labelling**

FDFST4008A	Preserve food in cans or sealed containers
FDFST4009A	Label foods according to legislative requirements
FDFTEC4008A	Apply principles of food packaging

**GROUP B: INDUSTRY SPECIALISATION ELECTIVES**

Select a minimum of two (2) elective Units from Group A or B.

**Meat processing**

MTMCOR202A	Apply hygiene and sanitation practices
MTMCOR404A	Facilitate hygiene and sanitation performance
MTMP402B	Implement a Meat Hygiene Assessment Program
MTMP404B	Apply meat science
MTMPS411C	Monitor a meat preservation process
MTMPS412C	Monitor and overview the production of processed meats and smallgoods
MTMPS414B	Monitor and overview the production of Uncooked Comminuted Fermented Meat (UCFM)* <i>MTMCOR202A Apply hygiene and sanitation practices</i> <i>MTMCOR404A Facilitate hygiene and sanitation performance</i>
MTMPSR407A	Assess and evaluate meat industry requirements and processes
MTMPSR408A	Specify beef product using AUS-MEAT language
MTMPSR409A	Specify sheep product using AUS-MEAT language
MTMPSR410A	Specify pork product using AUS-MEAT language

**Dairy processing**

FDFST4020A	Implement and review the processing of market milk and related products
FDFST4021A	Carry out sampling and testing of milk at receipt
FDFST4022A	Implement and review the preparation of milk for processing

**Confectionery manufacture**

FDFST4030A	Implement and review the processing of chocolate and sugar-panned products
FDFST4031A	Implement and review the processing of aerated confectioneries
FDFST4032A	Implement and review the production of gums and jellies
FDFST4033A	Implement and review the production of chocolate products
FDFST4034A	Implement and review the processing of chocolate

FDFST4035A	Implement and review the processing of high and low boil confectionery
FDFST4036A	Implement and review the processing of confectionery products

### **Poultry industry processing**

FDFST4040A	Identify and implement product safety and quality for chilled or frozen poultry product manufacturing
FDFST4041A	Identify and implement product safety and quality for cooked poultry product manufacturing
FDFST4042A	Identify and implement product safety and quality for egg-based product manufacturing

### **Cheese production**

FDFCH4001A	Carry out sampling and interpret tests for cheese production* <i>MSL973001A Perform basic tests</i>
FDFCH4002A	Produce acid-coagulated soft cheese
FDFCH4003A	Produce a range of rennet-coagulated cheeses
FDFCH4004A	Produce acid/heat-coagulated cooked cheese
MSL973001A	Perform basic tests

### **Other sectors**

FDFST4050A	Identify and implement product safety and quality for processing of fruit, vegetables and other produce
FDFST4051A	Identify and implement product safety and quality processes for fish and seafood products
FDFST4052A	Implement and review the manufacturing and processing of edible fats and oils
FDFST4053A	Implement and review manufacturing, packaging and testing of beverage products
FDFST4054A	Identify and implement product safety and quality for manufacturing of cereal products