

National Certificate in Dairy Manufacturing (Technology) (Level 4)

Level 4

Credits 44

This qualification has been **reviewed**. The last date to meet the requirements is 31 December 2019.

Version 8 of this qualification has been republished to extend the last date of enrolment on programmes leading to it from 31 December 2015 to 31 December 2017 and extend the last date of assessment from 31 December 2017 to 31 December 2019.

Transition Arrangements

This qualification has been reviewed and replaced by the New Zealand Certificate in Dairy Processing (Level 5) [Ref: 2564].

The last date for entry into programmes leading to the qualification is 31 December 2017.

For detailed information see [Review Summaries](#) on the NZQA website.

NZQF National Qualification Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	January 1994	December 2004
Revision	2	September 1997	December 2004
Review	3	March 2000	December 2005
Revision	4	June 2001	December 2005
Revision	5	January 2004	December 2008
Review	6	May 2006	December 2011
Review	7	November 2009	December 2017
Review	8	October 2014	December 2017
Republication	8	December 2015	December 2019

Standard Setting Body

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National Certificate in Dairy Manufacturing (Technology) (Level 4)

Level	4
Credits	44

Purpose

This qualification is designed for experienced operations staff who require more in-depth technical knowledge than that provided by the National Certificate in Dairy Manufacturing (Process Skills) (Level 3) with strands in Processing and Supply Chain, and with optional strands in Performance Improvement, and Product Safety [Ref: 1043].

Elective A allows candidates to select standards related to separation and standardisation processes, Fritz butter making, anhydrous milkfat manufacturing, production of casein, membrane processing, cheese manufacturing, cream products, centrifugal separation, a-lactose monohydrate processes, spray dried dairy products, fermentation, distillation skills, milkfat fractionation processes, and evaporation processes.

Elective B enables candidates to select standards, which complement their job roles, from the Dairy People Skills, Dairy Product Safety and Risk Management, Dairy Technology, and Dairy Workplace Health and Safety domains.

This qualification is a platform for tertiary level study in dairy technology and competitive manufacturing at university.

Credit Range

	Elective A	Elective B
Level 4 credits	6-44	0-38
Minimum totals	6-44	0-38

Requirements for Award of Qualification

Award of NQF Qualifications

Credit gained for a standard may be used only once to meet the requirements of this qualification.

Unit standards and achievement standards that are equivalent in outcome are mutually exclusive for the purpose of award. The table of mutually exclusive standards is provided in section 7 of the New Zealand Qualifications Authority (NZQA) Rules and Procedures publications available at <http://www.nzqa.govt.nz/ncea/acrp/index.html>.

Reviewed standards that continue to recognise the same overall outcome are registered as new versions and retain their identification number (ID). Any version of a standard with the same ID may be used to meet qualification requirements that list the ID and/or that specify the past or current classification of the standard.

Summary of Requirements

- A minimum of 44 credits at Level 4 or above
- Elective A – A minimum of 1 standard as specified
- Elective B – Balance

Detailed Requirements

Elective A

A minimum of 1 standard

Manufacturing > Dairy Manufacturing > Dairy Technology

ID	Title	Level	Credit
764	Explain a separation and standardisation process in the dairy industry	4	24
765	Explain the Fritz buttermaking process in the dairy industry	4	32
766	Explain anhydrous milkfat manufacturing plant in the dairy industry	4	32
768	Explain a wet and dry process for the production of casein products in the dairy industry	4	32
769	Explain membrane processing in the dairy industry	4	32
770	Explain a cheese manufacturing process in the dairy industry	4	32
8959	Explain a wet and dry process for the production of caseinate in the dairy industry	4	24
8960	Determine the manufacturing variables for processed cheese in the New Zealand dairy industry	4	6
16304	Explain the manufacture of cream products using scraped-surface heat exchange in the dairy industry	4	32
17619	Explain the efficient crystallisation, decanting, washing and filtration of α -lactose monohydrate	4	24
17621	Explain the general principles of centrifugal separation and clarification in the dairy industry	4	6
17622	Explain key quality parameters and process variables for a specialty spray dried dairy product	4	30
19329	Explain the fermentation process in the dairy industry	4	8
19330	Demonstrate knowledge of distillation skills in the dairy industry	4	8
19739	Explain the operation of milkfat fractionation processes in the dairy industry	4	32
21801	Identify raw materials and products and describe a spray drier process used in the dairy industry	4	18
21802	Identify materials and products and describe an evaporation process used in the dairy industry	4	16

Elective B

The balance of credits to achieve

A minimum of 44 credits at Level 4 or above

May come from the following

Manufacturing > Dairy Manufacturing > Dairy People Skills

ID	Title	Level	Credit
19336	Prepare and present one to one on-job instruction in a dairy industry workplace	4	6
21114	Develop and review Standard Operating Procedures (SOPs) for a dairy processing operation	4	5

Manufacturing > Dairy Manufacturing > Dairy Product Safety and Risk Management

ID	Title	Level	Credit
16301	Explain microbiological sampling, testing methods and prevention of contamination in dairy products	4	4
16667	Coordinate the development and verification of a HACCP plan in the dairy industry	4	30
18407	Explain the workplace application of HACCP in the dairy industry	4	8
19331	Explain prevention and control of product safety hazards in the dairy industry	4	5
21126	Describe cleaning systems and analyse data to optimise CIP performance in dairy manufacturing	4	12
25676	Explain automated process control and fault diagnosis in an automated dairy manufacturing process	4	8

Manufacturing > Dairy Manufacturing > Dairy Technology

ID	Title	Level	Credit
758	Explain mechanical fundamentals for the dairy industry	4	6
760	Diagnose basic mechanical and electrical faults in the dairy industry	4	8
17621	Explain the general principles of centrifugal separation and clarification in the dairy industry	4	6
19334	Operate and maintain heat treatment critical control points for milk processing	4	5
22347	Explain operating principles and applications of common dairy unit processing operations	4	8

Manufacturing > Dairy Manufacturing > Dairy Workplace Health and Safety

ID	Title	Level	Credit
16311	Develop strategies to prevent, detect and control fire and explosion in a spray drying plant	4	5

Transition Arrangements

Version 7

Version 7 was issued following a review.

Changes to structure and content

- Credit total was decreased from 46-64 (depending on strand) to 44.
- The core elective and qualification strands were removed, and the qualification structure now consists of two electives - Elective A and Elective B.
- Standards 764, 765, 766, 768, 769, 770, 8959, 8960, 16304, 17619, 17621, 17622, 19329, 19330, 19739, 21801, and 21802 (from the Product Skills strand) were moved, and standard 17621 was added, to Elective A.
- Standards 758, 760, 16301, 16311, 17621, 19331, 19334, 19336, 21114, 21126, and 22347 (from the Core Elective), and standards 16667 and 18407 (from the Food Safety strand) were moved, and standard 25676 was added, to Elective B.
- Standards 761, 762, 4826, 4829, 19332, 19333, 19527, and 19529 were removed from the qualification.

For detailed information see [Review Summaries](#) on the NZQA website.

People currently working towards version 6 of this qualification may either complete the requirements for that version or transfer their results to this version of the qualification.

The last date for entry to training programmes or courses for version 6 is 31 December 2010.

This qualification contains standards that replace earlier standards. For the purposes of this qualification people who have gained credit for the expiring standards are exempt from the requirement to gain credit for the replacement standards.

Credit for	Exempt from
767	21801, 21802
19527	25676

Anyone who feels disadvantaged by these transition arrangements should contact the New Zealand Industry Training Organisation at the address below.

Previous versions of the qualification

Version 6 was issued following a review to update the structure and content of the qualification. Title was changed to reflect changes in the strands and to add 'Technology'; the two core elective sections were reduced to one, with some standards moving to the Product Skills strand; credits were changed from 40-64 to 46-64 (depending on strand); the optional standards were removed; standards 762, 763 and 16302 were removed from, and standards 19336, 19529, 21114, 21126 and 22347 were added to, the core elective section; standards 21801 and 21802 replaced standard 767; the People Skills and Computing Skills strands were removed; the Process Improvement, Process Testing, and Product Skills (previously core elective 2) strands were added; the Product Safety optional strand was renamed Food Safety, and standards 19514 and 18406 were removed from, and standards 4826, 4829, 19332, 19333 and 18407 were added to, the strand.

Version 5 of this qualification was issued to take account of changes to domain classifications in the Dairy Manufacturing subfield. The qualification was restructured and a new optional strand in Computing Skills was added. The title became National Certificate in Dairy Manufacturing (Level 4) with optional strands in Product Safety, People Skills, and Computing Skills. Substantial changes were made to the content of the two core electives. Optional standards were either removed or incorporated into the core electives or optional strand. The Product Safety strand was renamed from Food Safety and the minimum credit required was reduced from 30 to 22.

Version 4 was issued following the addition of standards 17619, 17621 and 17622 to Core Elective 2.

Version 3 was issued following a review. The title was changed to reflect the addition of optional strands in People Skills, and Food Safety, and minimum total credits reduced from 48 to 40. Changes to structure resulted in two elective sections, and a list of optional standards.

Version 2 was issued after the qualification had its period of registration extended to allow for a full review of standards. Standard 764 was moved from the compulsory to elective section, and standards 8959 and 8960 added.

Certification

This certificate will display the logos of NZQA, the New Zealand Industry Training Organisation and the accredited organisation.

Classification

This qualification is classified according to the NQF classification system and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

NQF Classification		NZSCED	
Code	Description	Code	Description
245	Manufacturing > Dairy Manufacturing	030307	Engineering and Related Technologies > Process and Resources Engineering > Food (excluding Seafood) Processing Technology

Quality Management Systems

Providers and Industry Training Organisations must be accredited by a recognised Quality Assurance Body before they can register credits from assessment against standards. Accredited providers and Industry Training Organisations assessing against standards must engage with the moderation system that applies to those standards. Accreditation requirements and the moderation system are outlined in the associated Accreditation and Moderation Action Plan (AMAP) for each standard.

