Qualification details

Qualification number/Te nama o te tohu mātauranga	2900		
English title/Taitara Ingarihi	New Zealand Certificate in Aeronautical Engineering (Specialist Support) (Level 4) with strands in General Aviation, Aeronautical Composites, Aeronautical Electroplating, Aeronautical Machining, Aeronautical Non Destructive Testing, Aircraft Furnishings and Equipment, Aircraft Mechanical, Aircraft Painting, Aircraft Powerplant, Aircraft Structures, Armament, Avionics, Engine Ground Running, and Rotorcraft.		
Māori title/Taitara Māori			
Version number/Te putanga	2	**Qualification type/Te momo tohu**	Certificate
Level/Te kaupae	4	**Credits/Ngā whiwhinga**	120
NZSCED/Whakaraupapa	031503 Engineering and Related Technologies>Aerospace Engineering and Technology>Aircraft Maintenance Engineering		
Qualification developer/Te kaihanga tohu	Ringa Hora Services Workforce Development Council		
Review Date /Te rā arotake	31/12/2027		

Outcome statement/Te tauāki ā-hua

Strategic Purpose statement/ Te rautaki o te tohu

The purpose of this qualification is to provide the aeronautical engineering industry with graduates who can undertake a range of aeronautical engineering specialist support tasks of a limited scope, in accordance with the requirements of the New Zealand Defence Force Airworthiness Policy, or Part 43 and/or Part 145 Rules and the Civil Aviation Act 1990.

The qualification is intended for aeronautical engineers who want to concentrate on specialist support work.

Graduates will be competent in the range of core aeronautical engineering skills required across all sectors.

The strands within the qualification recognise the specialised knowledge and skills in the sector.

Graduate Profile/Ngā hua o te tohu

Graduates of this qualification will be able to:

- Interpret, evaluate, and apply information from aeronautical publications, including aircraft maintenance documentation, to complete maintenance tasks.
- Apply safe work practices, whilst exhibiting professional and ethical conduct to promote the safe maintenance of airworthiness standards as expected of a qualified Aeronautical Engineering tradesperson.
- Maintain, repair and/or overhaul aircraft by integrating the fundamental principles of aircraft

construction and maintenance.

Graduates of the General Aviation strand will also be able to:

- Maintain, repair, and overhaul aircraft in General Aviation by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards.

Graduates of the Aeronautical Composites strand will also be able to:

- Apply specialised technical knowledge, skills and maintenance practices to fabricate and repair aeronautical composites to meet international aviation standards.

Graduates of the Aeronautical Electroplating strand will also be able to:

- Apply and repair aeronautical electroplating by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards.

Graduates of the Aeronautical Machining strand will also be able to:

- Apply specialised technical knowledge, skills and maintenance practices to carry out aeronautical machining to meet international aviation standards.

Graduates of the Aeronautical Non Destructive Testing strand will also be able to:

- Apply specialised technical knowledge, skills and maintenance practices to complete aeronautical non destructive testing inspections to meet international aviation standards.

Graduates of the Aircraft Furnishings and Equipment strand will also be able to:

- Apply specialised technical knowledge, skills and maintenance practices to complete aircraft furnishing and equipment repair tasks to meet international aviation standards.

Graduates of the Aircraft Mechanical strand will also be able to:

- Apply specialised technical knowledge, skills and maintenance practices to complete aircraft mechanical maintenance and repair tasks to meet international aviation standards.

Graduates of the Aircraft Painting strand will also be able to:

- Apply specialised technical knowledge, skills and maintenance practices to complete aircraft painting tasks to meet international aviation standards.

Graduates of the Aircraft Powerplant strand will also be able to:

- Maintain and repair aircraft powerplant by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards.

Graduates of the Aircraft Structures strand will also be able to:

- Manufacture and repair aircraft structures by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards.

Graduates of the Armament strand will also be able to:

- Repair and maintain aircraft armament by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards.

Graduates of the Avionics strand will also be able to:

- Maintain and repair avionics by integrating specialised technical knowledge, skills and maintenance

practices to meet international aviation standards.

Graduates of the Engine Ground Running strand will also be able to:

- Ground run and troubleshoot aircraft engines and systems by integrating specialised powerplant technical knowledge, skills and maintenance practices to meet international aviation standards.

Graduates of the Rotorcraft strand will also be able to:

- Maintain and repair rotorcraft by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards.

Education Pathway/ Ngā huarahi mātauranga

This qualification can provide a pathway to other training opportunities in Aeronautical Engineering, including specific aircraft type or group ratings.

Pathway qualifications include:

New Zealand Diploma in Aeronautical Engineering (Quality and Safety – SMS) (Level 6) [Ref: 2905]

New Zealand Diploma in Aeronautical Engineering (Technical Support) (Level 6) [Ref: 2906]

New Zealand Diploma in Maintenance Planning (Level 5) [Ref: 2904]

This qualification can also lead to in-house training for aircraft type specific training.

Employment, Cultural, Community Pathway/ Ko ngā huarahi ā-mahi, ā-ahurea, ā-whānau, ā-hapū, ā-iwi, ā-hapori anō hoki

Graduates will have the skills and knowledge to be employed within the aircraft or aeronautical engineers sub-sector of the industry. They may progress into higher level Aeronautical Engineering niche roles such as Quality Assurance, Technical Support, Production Control, and Engineering Planning.

Building on the skills acquired in this qualification, holders may progress to become a licenced aircraft maintenance engineer.

Qualification Specifications/ Ngā tauwhāititanga o te tohu

Qualification Award/ Te whakawhiwhinga o te tohu	This qualification may be awarded by any education organisation with an approved programme.
Evidence requirements for assuring consistency/ Ngā taunaki hei whakaū i te tauritenga	Evidence may include the following: • analysis of employer surveys to determine if graduates of the qualification meet the graduate profile outcomes • analysis of graduate surveys to determine if graduates of the qualification meet the graduate profile outcomes • analysis of a range of workplace evidence demonstrating that graduates meet the qualification profile outcomes • evidence of effective internal and external quality assurance systems to assure that graduates meet the graduate outcomes of the qualification.

Minimum standard of achievement and standards for grade endorsements/ Te pae o raro e tutuki ai, ngā paerewa hoki hei whakaatu i te taumata o te whakatutukinga	Achieved
Other requirements for the qualification (including regulatory body or legislative requirements)/ Kō ētahi atu here o te tohu (tae atu hoki ki ngā here ā-hinonga whakamarumaru, ki ngā here ā-ture rānei)	None
General conditions for programme/ Ngā tikanga whānui o te hōtaka	To achieve this qualification trainees must at all times comply with aviation regulations applicable to aeronautical engineers, such as those set in place by Civil Aviation Authority (CAA) Rules or New Zealand Defence Force (NZDF) Policy. Additional guidance and recommendations for programme development can be found on the Ringa Hora website at https://www.ringahora.nz/qualifications-and-standards-overview/programme-guidance-documents-for-providers-developing-programmes/ Providers are advised to refer to the Ringa Hora Services Workforce Development Council Programme endorsement considerations: • Ngā Whakamārama - Programme content • Mana ōrite mō te hunga ako - Equity for learners • Torotoronga me te kimi whakaaro - Programme engagement and consultation • Te ao Māori • Te akoako me ngā reo o Te Moana-nui-a-Kiwa - Pacific languages and learners • Tangata Whaikaha - Disabled people Further information is available from NZQA on Programme approval and provider accreditation **Engine Ground Runner strand** To gain approval as an Engine Ground Runner, the candidate generally has to, dependant on organisational requirements: • be a qualified tradesperson or licenced aircraft maintenance engineer (LAME) • hold a maintenance approval or rating • have undertaken engine run training on type (actual or simulator) • hold an engine running approval • maintain currency on type. Programmes must include the following focus areas: Engine ground running from at least one of the following: propeller driven aircraft engines up to 300 horsepower or

	equivalent; propeller driven aircraft engines over 300 horsepower or equivalent; turbo-jet or turbo-fan aircraft engines; or helicopters. Programmes must also include the application of troubleshooting techniques to locate defects in line with current aeronautical engineering practice.

Conditions relating to the Graduate Profile /Ngā tikanga e hāngai ana ki nga hua o te tohu

Qualification outcomes/ Ngā hua		Credits/Ngā whiwhinga	Conditions/Ngā tikanga
1.	Interpret, evaluate, and apply information from aeronautical publications, including aircraft maintenance documentation, to complete maintenance tasks	10 credits	Recommended unit standard: 3894
2.	Apply safe work practices, whilst exhibiting professional and ethical conduct to promote the safe maintenance of airworthiness standards as expected of a qualified Aeronautical Engineering tradesperson	14 credits	Recommended unit standards: 27731, 28032
3.	Maintain, repair and/or overhaul aircraft by integrating the fundamental principles of aircraft construction and maintenance	36 credits	Recommended unit standards: 3895, 3896, 5428
Elective Strand - General Aviation			
4.	Maintain, repair, and overhaul aircraft in General Aviation by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Engineering and Technology > Aeronautical Engineering, any Domain
Elective Strand - Aeronautical Composites			
5.	Apply specialised technical knowledge, skills and maintenance practices to fabricate and repair aeronautical composites to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aeronautical Composites - Aeronautical Engineering - Core
Elective Strand - Aeronautical Electroplating			
6.	Apply and repair aeronautical electroplating by integrating specialised technical knowledge, skills and maintenance practices	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and

	to meet international aviation standards		Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aeronautical Electroplating - Aeronautical Engineering - Core
Elective Strand - Aeronautical Machining			
7.	Apply specialised technical knowledge, skills and maintenance practices to carry out aeronautical machining to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aeronautical Machining - Aeronautical Engineering - Core
Elective Strand - Aeronautical Non Destructive Testing			
8.	Apply specialised technical knowledge, skills and maintenance practices to complete aeronautical non destructive testing inspections to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aeronautical Non Destructive Testing - Aeronautical Engineering - Core
Elective Strand - Aircraft Furnishings and Equipment			
9.	Apply specialised technical knowledge, skills and maintenance practices to complete aircraft furnishing and equipment repair tasks to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aircraft Furnishings and Equipment - Aircraft Painting - Aeronautical Engineering - Core
Elective Strand - Aircraft Mechanical			
10.	Apply specialised technical knowledge, skills and maintenance practices to complete aircraft mechanical maintenance and repair tasks to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aircraft Mechanical Maintenance

			- Aircraft Mechanical Repair and Overhaul - Aeronautical Engineering - Core
Elective Strand - Aircraft Painting			
11.	Apply specialised technical knowledge, skills and maintenance practices to complete aircraft painting tasks to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aircraft Furnishings and Equipment - Aircraft Painting - Aeronautical Engineering - Core
Elective Strand - Aircraft Powerplant			
12.	Maintain and repair aircraft powerplant by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aircraft Powerplant Maintenance - Aircraft Powerplant Repair and Overhaul - Aeronautical Engineering - Core
Elective Strand - Aircraft Structures			
13.	Manufacture and repair aircraft structures by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aircraft Structures - Aeronautical Engineering - Core
Elective Strand - Armament			
14.	Repair and maintain aircraft armament by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aeronautical Armament - Aeronautical Engineering- Core

			- Avionic Maintenance
Elective Strand - Avionics			
15.	Maintain and repair avionics by integrating specialised technical knowledge, skills and maintenance practices to meet international aviation standards	60 credits	Recommended standards: A minimum of 60 credits, 40 credits of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aeronautical Engineering - Core - Avionic Electrical Repair - Avionic Instrument Repair - Avionic Maintenance - Avionic Radio Repair
Elective Strand – Engine Ground Running			
16.	Ground run and troubleshoot aircraft engines and systems by integrating specialised powerplant technical knowledge, skills and maintenance practices to meet international aviation standards.	60 credits	A minimum of 60 credits, 40 credits of which are at Level 4 or above. Programmes must include the following focus areas: Engine ground running from at least one of the following: propeller driven aircraft engines up to 300 horsepower or equivalent; propeller driven aircraft engines over 300 horsepower or equivalent; turbo-jet or turbo-fan aircraft engines; or helicopters. Programmes must also include the application of troubleshooting techniques to locate defects in line with current aeronautical engineering practice. Recommended standards: Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aircraft Powerplant Maintenance - Aircraft Powerplant Repair and Overhaul - Aeronautical Engineering – Core – Aeronautical Maintenance Certification
Elective Strand - Rotorcraft			
17.	Maintain and repair rotorcraft by integrating specialised technical	60 credits	Recommended standards: A minimum of 60 credits, 40 credits

	knowledge, skills and maintenance practices to meet international aviation standards		of which are at Level 4 or above. Within the Field Engineering and Technology, and the Subfield Aeronautical Engineering, standards from the following Domains: - Aeronautical Engineering - Core - Helicopter Maintenance - Helicopter Repair and Overhaul

Transition information/ He kōrero whakawhiti

Replacement information/ He kōrero mō te whakakapi	This qualification replaced the National Certificate in Aeronautical Engineering (Specialist Support) with optional strands in Aeronautical Composites; Aeronautical Electroplating; Aeronautical Machining; Aeronautical Non Destructive Testing; Aircraft Furnishings and Equipment; Aircraft Mechanical; Aircraft Painting; Aircraft Powerplant; Aircraft Structures; Armament; Avionics; and Rotorcraft [Ref: 0191]. The National qualification was discontinued on 31 December 2020.
Additional transition information/ Kō ētahi atu kōrero mō te whakakapi	**Version Information** Version 2 of this qualification was published in December 2022 as the result of a scheduled review. Please refer to Qualifications and Assessment Standards Approvals for further information. The last date for assessment for programmes leading to version 1 of this qualification is 31 December 2026. It is the intention of Ringa Hora Services Workforce Development Council that no existing trainee should be disadvantaged by these transition arrangements. Any person who considers they have been disadvantaged may appeal to: Ringa Hora Services Workforce Development Council PO Box 445 Wellington Phone: 04 909 0306 Web: https://www.ringahora.nz/ Email Qualifications@ringahora.nz