

Title	Demonstrate knowledge of launch vehicle construction principles, systems and practices		
Level	3	Credits	15

Purpose	People credited with this unit standard are able to demonstrate knowledge of: the principles of launch vehicle construction; launch vehicle systems; and standard launch vehicle construction practices.
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Classification	Aeronautical Engineering > Aerospace Engineering
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Available grade	Achieved
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Guidance Information

The level of knowledge required by this unit standard is basic understanding of principles, systems and practices and enables further knowledge and skills training to be completed at higher levels.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the principles of launch vehicle construction.

Performance criteria

- 1.1 Construction of a launch vehicle is described in terms of its major components and construction principles.
- 1.2 Major components are described in terms of their function on a launch vehicle in flight and on the ground.
- Range may include but is not limited to – propellant tanks, pressurisation and venting systems, umbilical connections, avionics, separation systems, engines, Heating, Ventilation, Air Conditioning (HVAC), batteries and harnessing.
- 1.3 Launch vehicle construction materials are described in terms of their basic properties and reasons for use in rockets.
- Range may include but is not limited to – ferrous metals, non-ferrous metals, composites.

Outcome 2

Demonstrate knowledge of launch vehicle systems.

Performance criteria

- 2.1 Propulsion systems are described in terms of their operating principles, major components and use on launch vehicle.
- 2.2 Mechanical systems are described in terms of their purpose, operating principles, and major components.
 - Range may include but is not limited to – pressurisation systems, propellant management, structural hardware, separation systems, hydraulics, pneumatics, HVAC environmental control.
- 2.3 Avionic systems are described in terms of their purpose, operating principles, and major components.
 - Range may include but is not limited to – harnessing, instrumentation and sensors, components, batteries, antennas.
- 2.4 The interrelationship of systems is described in terms of their use during launch vehicle operation and control.
- 2.5 Common hazards and standard assembly practices are described in terms of their application to launch vehicle system assembly activities.

Outcome 3

Demonstrate knowledge of standard launch vehicle construction practices.

Performance criteria

- 3.1 The reasons for, and principles of, standard industry practices are described in terms of their application to basic launch vehicle construction activities.
 - Range may include but is not limited to – tool control, quality control, inspection procedures, bonding, foreign object damage prevention, disposal of parts and materials, identification symbols and markings, use of approved publications, certification of work, control of parts and materials, defect reporting, handling of electrostatic sensitive devices.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 April 2020	N/A
Revision	2	24 November 2022	N/A

Consent and Moderation Requirements (CMR) reference

0028

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Ringa Hora Services Workforce Development Council qualifications@ringahora.nz if you wish to suggest changes to the content of this unit standard.