

Title	Demonstrate knowledge of gas turbine engine for aeronautical engineering (EASA 147 Maintenance)		
Level	5	Credits	15

Purpose	<p>This knowledge-based unit standard is one of a series intended for people under training to gain authorisation to certify, to European Aviation Safety Agency (EASA) standards, the release to service of aircraft or aeronautical components following maintenance or repair.</p> <p>People credited with this unit standard are able to demonstrate knowledge of gas turbine engine for aeronautical engineering (EASA 147 Maintenance).</p>
----------------	---

Classification	Aeronautical Engineering > Aeronautical Maintenance Certification
-----------------------	---

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 This unit standard is aligned with the European Aviation Safety Agency Examination Standard for *Module 15 Gas Turbine Engine* and will be evidenced by meeting these requirements. This can be located through the EASA website at <http://www.easa.europa.eu>.
- 2 *Knowledge* – will be in the context of aeronautical maintenance as defined by European Commission Regulation (EU) No 1321/2014 as follows: ‘A detailed knowledge of the theoretical and practical aspects of the subject and a capacity to combine and apply the separate elements of knowledge in a logical and comprehensive manner’; will include making judgements regarding the scope, processes, and quality of maintenance for release to service certification; and will be in accordance with industry texts as defined by the candidate’s workplace or enterprise.
- 3 *Industry texts* include but are not limited to –
published aeronautical training manuals or text books;
enterprise exposition;
manufacturer publications;
government and local body legislation;
airworthiness or regulatory authority requirements.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of gas turbine engine for aeronautical engineering (EASA 147 Maintenance).

Performance criteria

- 1.1 General principles and structure of gas turbine engine are described and explained.
- Range general principles may include but are not limited to – fundamentals, (e.g. potential and kinetic energy; Newton's laws of motion; Brayton cycle; the relationship between force, work, power, energy, velocity, and acceleration; turbojet; turbofan; turboshaft; turboprop); engine performance may include but is not limited to – inlet, compressors, combustion section, turbine section, exhaust, bearings, seals, lubricants, fuels.
- 1.2 Gas turbine systems are described and their operations are explained.
- Range may include but is not limited to – lubrication systems, fuel systems, air systems, starting and ignition systems, engine indication systems, power augmentation systems, auxiliary power units, powerplant installation, fire protection systems.
- 1.3 Turboprop and turboshaft engines are described and their method of operation is explained.
- Range turboprop engines may include but are not limited to – gas coupled and gear coupled turbines, reduction gears, integrated engine and propeller controls, overspeed safety devices; turboshaft engines may include but are not limited to – drive systems, reduction couplings, control systems.
- 1.4 Procedures for maintenance of gas turbine engines are described and explained.
- Range may include but is not limited to – engine monitoring and ground operation, engine storage and preservation.

Planned review date	31 December 2027
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	16 August 2012	31 December 2020
Review	2	28 September 2017	31 December 2024
Review	3	27 October 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.