

<b>Title</b>	<b>Demonstrate knowledge of helicopters for aeronautical engineering (EASA 147 Maintenance)</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>60</b>

<b>Purpose</b>	<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 helicopters for aeronautical engineering (EASA 147 Maintenance).</p>
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<b>Classification</b>	Aeronautical Engineering > Aeronautical Maintenance Certification
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 This unit standard is aligned with the European Aviation Safety Agency Examination Standard for *Module 12. Helicopter Aerodynamics, Structures and Systems* 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.
- 4 Some performance criteria are aligned with *iSpec 2200: Information Standards for Aviation Maintenance - 2021.1*. Washington, DC: Airlines for America, 2021. Airlines for America (A4A) was formerly known as Air Transport Association of America (ATA). Chapter numbers are cited where applicable.

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## Outcomes and performance criteria

### Outcome 1

Demonstrate knowledge of helicopters for aeronautical engineering (EASA 147 Maintenance).

### Performance criteria

- 1.1 The theory of flight for rotary wing aircraft is described and explained.
- Range may include but is not limited to – aerodynamics terminology, gyroscopic precession; torque reaction and directional control, dissymmetry of lift, blade tip stall, translating tendency, Coriolis effect and compensation, vortex ring state, power settling, overpitching, auto-rotation, ground effect.
- 1.2 Blade tracking and vibration are described and their effects in rotary wing aircraft operations are explained.
- Range may include but is not limited to – rotor alignment, rotor tracking, static and dynamic balancing, vibration types and reduction methods, ground resonance.
- 1.3 Airframe structures are described and their applications in rotary wing aircraft operations are explained.
- Range may include but is not limited to – airworthiness requirements for structural strength, construction methods.
- 1.4 Aircraft systems are described and their applications in rotary wing aircraft operations are explained.
- Range may include but is not limited to – flight control systems, transmissions, air conditioning (ATA Chapter 21), instrument systems (ATA Chapter 31), avionic systems (ATA Chapters 22-23, 34), electrical power (ATA Chapter 24), equipment and furnishings (ATA Chapter 25), fire protection (ATA Chapter 26), fuel systems (ATA Chapter 28), hydraulic power (ATA Chapter 29), ice and rain protection (ATA Chapter 30), landing gear (ATA Chapter 32), lights (ATA Chapter 33), pneumatic/vacuum systems (ATA Chapter 36), integrated modular avionics (ATA Chapter 42), on board maintenance system (ATA Chapter 45), information systems (ATA Chapter 46).

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<b>Planned review date</b>	31 December 2027
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**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

<b>Consent and Moderation Requirements (CMR) reference</b>	0028
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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](mailto:qualifications@ringahora.nz) if you wish to suggest changes to the content of this unit standard.