Title	**Describe dynamics, and techniques for managing dynamics, of light motor vehicles**		
Level	**2**	**Credits**	**4**

Purpose	People credited with this unit standard are able to describe dynamics that affect motor vehicle handling, and techniques for managing motor vehicle dynamics.

Classification	Driving > Core Driving Knowledge and Skills

Available grade	Achieved

Guidance Information

Definitions
Adverse road surface conditions may include but are not limited to – low friction (eg loose metal, wet tarseal, ice, sand), off-camber, foreign materials, surface irregularities.
Communication techniques when towing includes hand signals worked out and agreed on in advance, and mobile phone technology.
Cornering includes negotiating bends, intersections, and driveways.
Driving refers to being in control of a motor vehicle. For this unit standard, motor vehicles exclude motorcycles.
A *light motor vehicle* is a motor vehicle (including a tractor but excluding a motorcycle) that has a gross laden weight of not more than 4500 kg or a combination vehicle that has a gross combined weight of not more than 4500 kg.
A *load* is freight or passengers.
A *slope* is a gradient on which braking must be applied to prevent a stationary vehicle from moving.
A *trailer* is defined by the Land Transport Act 1998 as a vehicle.
Vehicle types are *sedan* (a two or four-door vehicle with a passenger compartment between the lower front and the rear); *van* (a generally box-shaped vehicle used for transporting goods or groups of people); *4WD vehicle* (any vehicle capable of having motive power applied simultaneously to all four wheels); *utility vehicle* (a light truck with an open-top cargo area, short rigid sides and an opening rear gate).

Outcomes and performance criteria

Outcome 1

Describe dynamics that affect motor vehicle handling.

Performance criteria

1.1 Physical responses in terms of the weight transfer of a motor vehicle, load, or passengers, during braking and acceleration are described.

Range moderate braking, heavy braking, moderate acceleration, severe acceleration.

1.2 Physical responses in terms of the weight transfer of a motor vehicle, load, or passengers, during cornering are described.

Range differing speeds, differing intensities of corners, with braking, with acceleration.

1.3 The effect of adverse road surface conditions on motor vehicle handling while braking, accelerating, and cornering is described.

1.4 The effect of safety systems on motor vehicle handling is described.

Range anti-lock braking systems, traction control systems, active suspension systems.

1.5 The effect of a load on motor vehicle handling is described.

1.6 The effect of towing another vehicle on motor vehicle handling is described.

Range rigid tow bars, flexible tow bars (rope or chain), tow bar length; trailer load mass, load distribution.

1.7 Comparison of the handling characteristics of different vehicle types is described.

Range comparison of any three of – sedan, van, 4WD vehicle, utility vehicle;
includes – traction, latent stability, driver visibility, rollover characteristics, cornering ability, stopping ability, acceleration ability.

Outcome 2

Describe techniques for managing motor vehicle dynamics.

Performance criteria

2.1 Handling techniques for preventing loss of control during cornering, braking, and accelerating are described.

Range under favourable driving conditions, under adverse driving conditions.

2.2 Techniques for managing a load to reduce the likelihood of loss of control are described.

Range tyre pressure, suspension settings, weight distribution.

2.3 Handling and load distribution techniques for preventing loss of control during towing are described.

Range with rigid towing connections, with flexible towing connections (eg rope, chain).

2.4 Driving and communication techniques for managing the dynamics of towing and towed motor vehicles are described.

Range during cornering, during driving up and down slopes, during normal braking, during emergency braking.

Planned review date	31 December 2025

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 March 1995	31 December 2023
Review	2	29 June 1999	31 December 2023
Revision	3	14 November 2000	31 December 2023
Review	4	22 October 2004	31 December 2023
Review	5	27 October 2006	31 December 2023
Review	6	28 April 2022	N/A

Consent and Moderation Requirements (CMR) reference	0014

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

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering, and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.