

## **Apply Advanced Techniques for operating four-wheel drive (4WD) vehicles in on-road and off-road conditions**

US ID: 254154

NQF Level: 3

NQF Credits: 8

Duration: 4 Days

### **Purpose of the unit standard**

This unit standard is for learners seeking to apply the advanced concepts related to 4WD utilisation. This unit standard will enable the learner to practically demonstrate the knowledge and skills required to handle a 4WD vehicle on-road and off-road, understand preventative maintenance and handle recovery situations and equipment, in an environmentally considerate manner. 4WD vehicles include all-terrain vehicles (ATVs), Quad and Off-road Motor Bikes.

### **Credited learners are capable of:**

Explaining the differences in driving a 4WD or an ATV or a Quad Bike or an off-road Motor Bike on-road and off-road.

Demonstrating knowledge of passenger and vehicle safety precautions.

Demonstrating understanding of the features of a 4WD or an ATV or a Quad Bike or an off-road Motor Bike for off-road conditions.

Demonstrating an understanding of off-road conditions and their relation to vehicle preparation and behaviour.

Demonstrating basic recovery techniques.

Demonstrating an understanding and application of techniques typical to specific obstacles that are nature and terrain dependent.

This unit standard includes all-terrain vehicles (ATVs), Quad and Off-road Motor Bikes, however, learners that are found competent to operate a standard 4WD vehicle or an ATV will not be competent to operate a Quad or an Off-road Motor Bike unless they repeat this unit standard for a Quad or an Off-road Motor Bike and vice versa.

### **Specific outcome 1**

Explain the differences in driving 4WD on-road and off-road.

Vehicle dimensions are explained in relation to on-road and off-road operations.

The centre of gravity is explained in relation to on-road and off-road operations.

Stopping distances for on-road and off-road operations are explained in relation to each context.

The function of tyres is explained in relation to on-road and off-road operations.

### **Specific outcome 2**

Demonstrate basic knowledge of passenger and vehicle safety precautions.

The concept of "safety first" is explained in relation to 4WD on-road and off-road utilisation.

The use of seatbelts is explained in relation to safety precautions required for on-road and off-road utilisation.

The handbook and maintenance schedule are reviewed in relation to on-road and off-road operations.

A pre-trip preparation is carried out on a vehicle in terms of the trip to be undertaken.

The rules of convoy driving, and communication are explained with examples.

The critical tools required for emergencies are identified and explained in relation to their functions in off-road emergency situations.

### **Specific outcome 3**

Demonstrate understanding of the features of a 4WD vehicle for off-road conditions.

The ergonomics that are applicable to a vehicle are explained in relation to on-road and off-road conditions.

The range of shift options and applications are demonstrated for a variety of operating conditions.

An understanding of matching the vehicle and accessories to varied conditions is demonstrated for a variety of operating conditions.

An understanding of the applications of tyres is demonstrated for a variety of operating conditions.

### **Specific outcome 4**

Demonstrate an understanding of off-road conditions and their relation to vehicle preparation and behaviour.

The vehicle dynamics for off-road utilisation are explained with examples.

The terrain and its varying effects on the vehicle are explained with examples.

A 4WD vehicle is prepared for off-road conditions and specific operational requirements.

An understanding of the environmental principles about considerate off-road utilisation is explained with examples.

### **Specific outcome 5**

Demonstrate basic recovery techniques.

Recovery dynamics and selection of secure recovery points are explained with reference to varying off-road conditions.

An understanding of recovery equipment and safety procedures is explained with examples.

Elementary recovery techniques are applied in varying off-road conditions.

### **Specific outcome 6**

Apply driving techniques typical to specific obstacles that are nature and terrain dependent.

Off-road obstacles and off-road route selection are explained with references to the regulatory framework.

Factors influencing off-road operation are explained with specific reference to varying off-road conditions.

Traction in relation to the maintaining and/or loss thereof and traction control aids are explained in relation to varying off-road conditions.

Typical obstacles that apply to off-road conditions are explained in relation to how they will affect vehicle handling.

### **Learning assumed to be in place**

Communication at NQF Level 2.

The techniques for operating a four-wheel drive (4WD) vehicle at NQF Level 3.

It is assumed that the learner accessing this standard will be in possession of a Code A or B or EB Drivers Licence or any such license deemed applicable in terms of the legislation in force at the time and has an understanding of the knowledge required of a licensed road user.