

SERVICING AND REPAIRING VEHICLE ENGINES

UNIT CODE: ENG/CR/AUT/CR/2/4/A

Relationship to Occupational Standards

This unit addresses the unit of competency: **Service and repair vehicle engines.**

Duration of Unit: 70 hours

Unit description:

This unit specifies competencies required to service and repair vehicle engine. It involves disassembling the engine, inspecting, servicing/replacing engine parts/components, assembling the engine, performing engine basic tests and preparing vehicle service/repair reports.

Summary of Learning Outcomes:

1. Disassemble engine
2. Clean and inspect engine parts/components
3. Service/replace vehicle engine parts/component
4. Assemble engine
5. Perform engine basic tests and prepare service/repair report

Learning Outcomes, Content and Suggested Assessment Methods

Learning outcome	Content	Suggested Assessment methods
1. Disassemble vehicle engine	<ul style="list-style-type: none">• Appropriate tools and equipment.• Use of Personal protective equipment (PPE)• Health, safety environment and quality regulations• Function of the engine• Operating principle of the engine.• Construction of engine.• Prior inspection of engine parts.	<ul style="list-style-type: none">• Practical/observation• Oral questioning• Written test

	<ul style="list-style-type: none"> • Dismantling Engine 	
2. Clean and inspect engine parts/components	<ul style="list-style-type: none"> • Cleaning and inspecting vehicle Engine part/components. • Operating principle of engine components. • Inspections on engine parts/components • Manufacturers specifications on engine parts/components • Construction of engine components. 	<ul style="list-style-type: none"> • Practical/observation • Oral questioning • Written test • Learner portfolio of evidence
3. Service/replace vehicle engine parts/component	<ul style="list-style-type: none"> • Services on vehicle engine parts/components • Replacing defective vehicle engine parts/components • Adjustments/alignments on engine parts/components 	<ul style="list-style-type: none"> • Practical/observation • Oral questioning • Written test
4. Assemble engine	<ul style="list-style-type: none"> • Identifying vehicle engine parts/components. • Assembling procedure of vehicle engine parts/components 	<ul style="list-style-type: none"> • Practical/observation • Oral questioning • Written test
5. Perform vehicle engine basic tests and prepare service/repair report	<ul style="list-style-type: none"> • Vehicle Engine basic tests. – e.g. manually rotating engine • Engine adjustment and timing marks alignments • Disposal of waste materials • Preparing service /repair report. 	<ul style="list-style-type: none"> • Practical/observation • Oral questioning • Written test. • Report written

Suggested Methods of Instruction:

- Presentations and practical demonstrations by trainer;
- Guided learner activities
- Supervised activities and projects in a workshop;
- Visiting lecturer/trainer from the motor vehicle service and repair sector;
- Industrial visits.

Recommended Resources

Tools

- Comprehensive set of hand tools for the service and repair of motor vehicle Engines.

Equipment

- Engine instructional models;
- A fully equipped motor vehicle maintenance workshop;
- Functional vehicle Engine.
- Vehicle lift/inspection pit;
- Specialist tools and equipment appropriate for the different makes and types of vehicle engines that are being maintained;
- Internet access to manufacturers' technical information/data
- Torque setting tools;
- Personal protective equipment (PPE) and suitable coverings to protect vehicles;
- Vehicle protective coverings;
- Facilities for the disposal of waste oil and used parts
- Customer database and systems for recording maintenance records

Materials and supplies

- Digital instructional material including DVDs and CDs;
- Consumables for service and repair of vehicle engines including:
- Engine lubricants;
- Sealants, oil seals and gaskets;
- Cleaning materials;
- Hand cleaner
- Cotton waste for cleaning