AUTOMOTIVE REPAIR AND MAINTENANCE
NQF LEVEL 2

September 2007
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SECTION A: PURPOSE OF THE SUBJECT ASSESSMENT GUIDELINES

This document provides the lecturer with guidelines to develop and implement a coherent, integrated assessment system for Automotive Repair and Maintenance in the National Certificates (Vocational). It must be read with the National Policy Regarding Further Education and Training Programmes: Approval of the Documents, Policy for the National Certificates (Vocational) Qualifications at Levels 2 to 4 on the National Qualifications Framework (NQF). This assessment guideline will be used for National Qualifications Framework Levels 2-4.

This document explains the requirements for the internal and external subject assessment. The lecturer must use this document with the Subject Guidelines: Automotive Repair and Maintenance to prepare for and deliver Automotive Repair and Maintenance. Lecturers should use a variety of resources and apply a range of assessment skills in the setting, marking and recording of assessment tasks.

SECTION B: ASSESSMENT IN THE NATIONAL CERTIFICATES (VOCATIONAL)

1 ASSESSMENT IN THE NATIONAL CERTIFICATES (VOCATIONAL)

Assessment in the National Certificates (Vocational) is underpinned by the objectives of the National Qualifications Framework (NQF). These objectives are to:

- Create an integrated national framework for learning achievements.
- Facilitate access to and progression within education, training and career paths.
- Enhance the quality of education and training.
- Redress unfair discrimination and past imbalances and thereby accelerate employment opportunities.
- Contribute to the holistic development of the student by addressing:
  - social adjustment and responsibility;
  - moral accountability and ethical work orientation;
  - economic participation; and
  - nation-building.

The principles that drive these objectives are:

- **Integration**
  To adopt a unified approach to education and training that will strengthen the human resources development capacity of the nation.

- **Relevance**
  To be dynamic and responsive to national development needs.

- **Credibility**
  To demonstrate national and international value and recognition of qualification and acquired competencies and skills.

- **Coherence**
  To work within a consistent framework of principles and certification.

- **Flexibility**
  To allow for creativity and resourcefulness when achieving Learning Outcomes, to cater for different learning styles and use a range of assessment methods, instruments and techniques.

- **Participation**
  To enable stakeholders to participate in setting standards and co-ordinating the achievement of the qualification.

- **Access**
  To address barriers to learning at each level to facilitate students’ progress.
• **Progression**
To ensure that the qualification framework permits individuals to move through the levels of the national qualification via different, appropriate combinations of the components of the delivery system.

• **Portability**
To enable students to transfer credits of qualifications from one learning institution and/or employer to another institution or employer.

• **Articulation**
To allow for vertical and horizontal mobility in the education system when accredited pre-requisites have been successfully completed.

• **Recognition of Prior Learning**
To grant credits for a unit of learning following an assessment or if a student possesses the capabilities specified in the outcomes statement.

• **Validity of assessments**
To ensure assessment covers a broad range of knowledge, skills, values and attitudes (SKVAs) needed to demonstrate applied competency. This is achieved through:
  - clearly stating the outcome to be assessed;
  - selecting the appropriate or suitable evidence;
  - matching the evidence with a compatible or appropriate method of assessment; and
  - selecting and constructing an instrument(s) of assessment.

• **Reliability**
To assure assessment practices are consistent so that the same result or judgment is arrived at if the assessment is replicated in the same context. This demands consistency in the interpretation of evidence; therefore, careful monitoring of assessment is vital.

• **Fairness and transparency**
To verify that no assessment process or method(s) hinders or unfairly advantages any student. The following could constitute unfairness in assessment:
  - Inequality of opportunities, resources or teaching and learning approaches
  - Bias based on ethnicity, race, gender, age, disability or social class
  - Lack of clarity regarding Learning Outcome being assessed
  - Comparison of students’ work with other students, based on learning styles and language

• **Practicability and cost-effectiveness**
To integrate assessment practices within an outcomes-based education and training system and strive for cost and time-effective assessment.

### 2 ASSESSMENT FRAMEWORK FOR VOCATIONAL QUALIFICATIONS

The assessment structure for the National Certificates (Vocational) qualification is as follows:

#### 2.1 Internal continuous assessment (ICASS)
Knowledge, skills values, and attitudes (SKVAs) are assessed throughout the year using assessment instruments such as projects, tests, assignments, investigations, role-play and case studies. The internal continuous assessment (ICASS) practical component is undertaken in a real workplace, a workshop or a “Structured Environment”. This component is moderated internally and externally quality assured by Umalusi. All internal continuous assessment (ICASS) evidence is kept in a Portfolio of Evidence (PoE) and must be readily available for monitoring, moderation and verification purposes.

#### 2.2 External summative assessment (ESASS)
The external summative assessment is either a single or a set of written papers set to the requirements of the Subject Learning Outcomes. The Department of Education administers the theoretical component according to relevant assessment policies.
A compulsory component of external summative assessment (ESASS) is the **integrated summative assessment task (ISAT)**. This assessment task draws on the students’ cumulative learning throughout the year. The task requires **integrated application of competence** and is executed under strict assessment conditions. The task should take place in a simulated or “Structured Environment”. The integrated summative assessment task (ISAT) is the most significant test of students’ ability to apply their acquired knowledge.

The integrated assessment approach allows students to be assessed in more than one subject with the same integrated summative assessment task (ISAT).

External summative assessments will be conducted annually between October and December, with provision made for supplementary sittings.

### 3 MODERATION OF ASSESSMENT

#### 3.1 Internal moderation

Assessment must be moderated according to the internal moderation policy of the Further Education and Training (FET) college. Internal college moderation is a continuous process. The moderator’s involvement starts with the planning of assessment methods and instruments and follows with continuous collaboration with and support to the assessors. Internal moderation creates common understanding of Assessment Standards and maintains these across vocational programmes.

#### 3.2 External moderation

External moderation is conducted by the Department of Education, Umalusi and, where relevant, an Education and Training Quality Assurance (ETQA) body according to South African Qualifications Authority (SAQA) and Umalusi standards and requirements.

The external moderator:

- monitors and evaluates the standard of all summative assessments;
- maintains standards by exercising appropriate influence and control over assessors;
- ensures proper procedures are followed;
- ensures summative integrated assessments are correctly administered;
- observes a minimum sample of ten (10) to twenty-five (25) percent of summative assessments;
- gives written feedback to the relevant quality assuror; and
- moderates in case of a dispute between an assessor and a student.

Policy on inclusive education requires that assessment procedures for students who experience barriers to learning be customised and supported to enable these students to achieve their maximum potential.

### 4 PERIOD OF VALIDITY OF INTERNAL CONTINUOUS ASSESSMENT (ICASS)

The period of validity of the internal continuous assessment mark is determined by the **National Policy on the Conduct, Administration and Management of the Assessment of the National Certificates (Vocational)**.

The internal continuous assessment (ICASS) must be re-submitted with each examination enrolment for which it constitutes a component.

### 5 ASSESSOR REQUIREMENTS

Assessors must be subject specialists and should ideally be declared competent against the standards set by the ETDP SETA. If the lecturer conducting the assessments has not been declared a competent assessor, an assessor who has been declared competent may be appointed to oversee the assessment process to ensure the quality and integrity of assessments.

### 6 TYPES OF ASSESSMENT

Assessment benefits the student and the lecturer. It informs students about their progress and helps lecturers make informed decisions at different stages of the learning process. Depending on the intended purpose, different types of assessment can be used.
6.1 Baseline assessment
At the beginning of a level or learning experience, baseline assessment establishes the knowledge, skills, values and attitudes (SKVAs) that students bring to the classroom. This knowledge assists lecturers to plan learning programmes and learning activities.

6.2 Diagnostic assessment
This assessment diagnoses the nature and causes of learning barriers experienced by specific students. It is followed by guidance, appropriate support and intervention strategies. This type of assessment is useful to make referrals for students requiring specialist help.

6.3 Formative assessment
This assessment monitors and supports teaching and learning. It determines student strengths and weaknesses and provides feedback on progress. It determines if a student is ready for summative assessment.

6.4 Summative assessment
This type of assessment gives an overall picture of student progress at a given time. It determines whether the student is sufficiently competent to progress to the next level.

7 PLANNING ASSESSMENT
An assessment plan should cover three main processes:

7.1 Collecting evidence
The assessment plan indicates which Subject Outcomes and Assessment Standards will be assessed, what assessment method or activity will be used and when this assessment will be conducted.

7.2 Recording
Recording refers to the assessment instruments or tools with which the assessment will be captured or recorded. Therefore, appropriate assessment instruments must be developed or adapted.

7.3 Reporting
All the evidence is put together in a report to deliver a decision for the subject.

8 METHODS OF ASSESSMENT
Methods of assessment refer to who carries out the assessment and includes lecturer assessment, self-assessment, peer assessment and group assessment.

<table>
<thead>
<tr>
<th>LECTURER ASSESSMENT</th>
<th>The lecturer assesses students’ performance against given criteria in different contexts, such as individual work, group work, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELF-ASSESSMENT</td>
<td>Students assess their own performance against given criteria in different contexts, such as individual work, group work, etc.</td>
</tr>
<tr>
<td>PEER ASSESSMENT</td>
<td>Students assess another student or group of students’ performance against given criteria in different contexts, such as individual work, group work, etc.</td>
</tr>
<tr>
<td>GROUP ASSESSMENT</td>
<td>Students assess the individual performance of other students within a group or the overall performance of a group of students against given criteria.</td>
</tr>
</tbody>
</table>

9 INSTRUMENTS AND TOOLS FOR COLLECTING EVIDENCE
All evidence collected for assessment purposes is kept or recorded in the student's Portfolio of Evidence (PoE).

The following table summarises a variety of methods and instruments for collecting evidence. A method and instrument is chosen to give students ample opportunity to demonstrate the Subject Outcome has been attained. This will only be possible if the chosen methods and instruments are appropriate for the target group and the Specific Outcome being assessed.
### METHODS FOR COLLECTING EVIDENCE

<table>
<thead>
<tr>
<th>Assessment instruments</th>
<th>Observation-based (Less structured)</th>
<th>Task-based (Structured)</th>
<th>Test-based (More structured)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Observation</td>
<td>• Assignments or tasks</td>
<td>• Examinations</td>
<td></td>
</tr>
<tr>
<td>• Class questions</td>
<td>• Projects</td>
<td>• Class tests</td>
<td></td>
</tr>
<tr>
<td>• Lecturer, student,</td>
<td>• Investigations or research</td>
<td>• Practical examinations</td>
<td></td>
</tr>
<tr>
<td>parent discussions</td>
<td>• Case studies</td>
<td>• Oral tests</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Practical exercises</td>
<td>• Open-book tests</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Demonstrations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Role-play</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Interviews</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Assessment tools**

<table>
<thead>
<tr>
<th>Observation sheets</th>
<th>Checklists</th>
<th>Marks (e.g. %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturer's notes</td>
<td>Rating scales</td>
<td>Rating scales (1-7)</td>
</tr>
<tr>
<td>Comments</td>
<td>Rubrics</td>
<td></td>
</tr>
</tbody>
</table>

**Evidence**

| Focus on individual students | Subjective evidence based on lecturer observations and impressions | Open middle: Students produce the same evidence but in different ways. Open end: Students use same process to achieve different results. | Students answer the same questions in the same way, within the same time. |

### 10 TOOLS FOR ASSESSING STUDENT PERFORMANCE

**Rating scales** are marking systems where a symbol (such as 1 to 7) or a mark (such as 5/10 or 50%) is defined in detail. The detail is as important as the coded score. Traditional marking, assessment and evaluation mostly used rating scales without details such as what was right or wrong, weak or strong, etc.

**Task lists** and **checklists** show the student what needs to be done. They consist of short statements describing the expected performance in a particular task. The statements on the checklist can be ticked off when the student has adequately achieved the criterion. Checklists and task lists are useful in peer or group assessment activities.

**Rubrics** are a hierarchy (graded levels) of criteria with benchmarks that describe the minimum level of acceptable performance or achievement for each criterion. It is a different way of assessment and cannot be compared to tests. Each criterion described in the rubric must be assessed separately. Mainly, two types of rubrics, namely holistic and analytical, are used.

### 11 SELECTING AND/OR DESIGNING RECORDING AND REPORTING SYSTEMS

The selection or design of recording and reporting systems depends on the purpose of recording and reporting student achievement. **Why** particular information is recorded and **how** it is recorded determine which instrument will be used.

Computer-based systems, for example spreadsheets, are cost and time effective. The recording system should be user-friendly and information should be easily accessed and retrieved.

### 12 COMPETENCE DESCRIPTIONS

All assessment should award marks to evaluate specific assessment tasks. However, marks should be awarded against rubrics and not simply be a total of ticks for right answers. Rubrics should explain the competence level descriptors for the skills, knowledge, values and attitudes (SKVAs) a student must demonstrate to achieve each level of the rating scale.

When lecturers or assessors prepare an assessment task or question, they must ensure that the task or question addresses an aspect of a Subject Outcome. The relevant Assessment Standard must be used to create the rubric to assess the task or question. The descriptions must clearly indicate the minimum level of attainment for each category on the rating scale.
13 STRATEGIES FOR COLLECTING EVIDENCE

A number of different assessment instruments may be used to collect and record evidence. Examples of instruments that can be (adapted and) used in the classroom include:

13.1 Record sheets
The lecturer observes students working in a group. These observations are recorded in a summary table at the end of each project. The lecturer can design a record sheet to observe students' interactive and problem-solving skills, attitudes towards group work and involvement in a group activity.

13.2 Checklists
Checklists should have clear categories to ensure that the objectives are effectively met. The categories should describe how the activities are evaluated and against what criteria they are evaluated. Space for comments is essential.

SECTION C: ASSESSMENT IN AUTOMOTIVE REPAIR AND MAINTENANCE

1 SCHEDULE OF ASSESSMENT

At NQF levels 2, 3 and 4, lecturers will conduct assessments as well as develop a schedule of formal assessments that will be undertaken in the year. All three levels also have an external examination that accounts for 50 percent of the total mark. The marks allocated to assessment tasks completed during the year, kept or recorded in a Portfolio of Evidence (PoE) account for the other 50 percent.

The Portfolio of Evidence (PoE) and the external assessment include practical and written components. The practical assessment in Automotive Repair and Maintenance must, where necessary, be subjected to external moderation by Umalusi or an appropriate Education and Training Quality Assurance (ETQA) body, appointed by the Umalusi Council in terms of Section 28(2) of the General and Further Education and Training Quality Assurance Act, 2001 (Act No. 58 of 2001).

2 RECORDING AND REPORTING

Automotive Repair and Maintenance, as is the case for all the other Vocational subjects, is assessed according to four levels of competence. The level descriptions are explained in the following table.

<table>
<thead>
<tr>
<th>RATING CODE</th>
<th>RATING</th>
<th>MARKS %</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Outstanding</td>
<td>80-100</td>
</tr>
<tr>
<td>4</td>
<td>Highly Competent</td>
<td>70-79</td>
</tr>
<tr>
<td>3</td>
<td>Competent</td>
<td>50-69</td>
</tr>
<tr>
<td>2</td>
<td>Not yet competent</td>
<td>40-49</td>
</tr>
<tr>
<td>1</td>
<td>Not achieved</td>
<td>0-39</td>
</tr>
</tbody>
</table>

The programme of assessment should be recorded in the Lecturer’s Portfolio of Assessment for each subject. The following should at least be included in the Lecturer’s Assessment Portfolio:

- A contents page
- The formal schedule of assessment
- The requirements for each assessment task
- The tools used for each assessment task
- Recording instrument(s) for each assessment task
- A mark sheet and report for each assessment task

The college must standardise these documents.

The student’s Portfolio of Evidence (PoE) must at least include:

- A contents page
- The assessment tasks according to the assessment schedule
- The assessment tools or instruments for the task
• A record of the marks (and comments) achieved for each task

Where tasks cannot be contained as evidence in the Portfolio of Evidence (PoE), its exact location must be recorded and it must be readily available for moderation purposes.

The following units guide internal assessment in Automotive Repairs and Maintenance Level 2:

<table>
<thead>
<tr>
<th>NUMBER OF UNITS</th>
<th>ASSESSMENT</th>
<th>COVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Formal written tests</td>
<td>One or more completed topics</td>
</tr>
<tr>
<td>1</td>
<td>Written exam</td>
<td>All completed topics</td>
</tr>
<tr>
<td>4</td>
<td>Practical assessment</td>
<td>Must cover the related Subject Outcome: e.g. Engine overhaul</td>
</tr>
</tbody>
</table>
ASSESSMENT OF
AUTOMOTIVE REPAIR AND MAINTENANCE
LEVEL 2
### 3 INTERNAL ASSESSMENT OF SUBJECT OUTCOMES IN AUTOMOTIVE REPAIR AND MAINTENANCE – LEVEL 2

**Topic 1: Understand the Fundamentals of Engine Technology**

**SUBJECT OUTCOME**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The position of engine parts in a motor vehicle are identified. <em>Range: radiator, starter motor, alternator, ignition system, battery, gear box</em></td>
<td>Identify the position of engine parts in a motor vehicle</td>
</tr>
<tr>
<td>The location of different engine parts in a motor vehicle is indicated.</td>
<td>Indicate the location of different engine parts in a motor vehicle</td>
</tr>
<tr>
<td>The main functions of engine parts in a motor vehicle are explained.</td>
<td>Explain the main functions of engine parts in a motor vehicle</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

- Assignment or case studies
- Evaluation of students' feedback
- Class test at the end of Subject Outcome

**SUBJECT OUTCOME**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The process of converting reciprocating motion to rotating motion is explained.</td>
<td>Understand the process of converting reciprocating motion to rotating motion.</td>
</tr>
<tr>
<td>The four strokes of the internal combustion engine are identified.</td>
<td>Identify the four strokes of the internal combustion engine.</td>
</tr>
<tr>
<td>The differences between a petrol engine and a diesel engine are explained.</td>
<td>Identify the differences between a petrol engine and a diesel engine.</td>
</tr>
<tr>
<td>The main operation of the two strokes internal combustion engine is explained.</td>
<td>Explain the main operation of the two strokes internal combustion engine.</td>
</tr>
<tr>
<td>The main operation of a rotary engine in a four-strokes internal combustion engine is explained.</td>
<td>Explain the main operation of a rotary engine in a four-strokes internal combustion engine.</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

- Assignment or case studies
- Evaluation of students' feedback
- Class test at the end of Subject Outcome
- Practical test with an engine

**SUBJECT OUTCOME**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The main purpose of lubrication in an engine is explained.</td>
<td>Describe the main purpose of lubrication in an engine.</td>
</tr>
<tr>
<td>The different types of lubrication are described.</td>
<td>Describe the different types of lubrication.</td>
</tr>
<tr>
<td>The types of oil pump for lubrication are described.</td>
<td>Describe the types of oil pump for lubrication.</td>
</tr>
<tr>
<td>The operation of crankcase ventilation is explained.</td>
<td>Explain the operation of crankcase ventilation.</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

- Assignment or case studies
- Evaluation of students' feedback
- Class test at the end of Subject Outcome
- Practical test with an engine
**Topic 2: Balance a Wheel**

<table>
<thead>
<tr>
<th>SUBJECT OUTCOME</th>
<th>Plan and prepare work area and vehicle for wheel balancing task.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSESSMENT STANDARD</td>
<td>LEARNING OUTCOMES</td>
</tr>
<tr>
<td>• The work area and vehicle is prepared for the wheel balancing task.</td>
<td>• Obtain, read and interpret task instructions or job card.</td>
</tr>
<tr>
<td></td>
<td>• Remove any potential obstacles from the work area.</td>
</tr>
<tr>
<td></td>
<td>• Clean the surrounding area.</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

- Assignment or case studies
- Evaluation of students’ feedback

<table>
<thead>
<tr>
<th>SUBJECT OUTCOME</th>
<th>Prepare wheel balancing machine.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSESSMENT STANDARDS</td>
<td>LEARNING OUTCOMES</td>
</tr>
<tr>
<td>• Wheel balancing machine is prepared.</td>
<td>• Clean the machine.</td>
</tr>
<tr>
<td>• Safety and operational conditions of wheel balancing are established.</td>
<td>• Check working conditions of equipment.</td>
</tr>
<tr>
<td>• Pre-calibration of wheel balancing machine is carried out.</td>
<td>• Collect the appropriate tools.</td>
</tr>
<tr>
<td>• Wheel balancing machine is adjusted according to wheel requirements.</td>
<td>• Arrange the size of balancing weight.</td>
</tr>
<tr>
<td></td>
<td>• Load necessary information into computer storage system.</td>
</tr>
<tr>
<td></td>
<td><strong>Range:</strong> wheel size, diameter, width, other required information needed</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

- Evaluate practical exercises on preparation of the wheel balancing machine.
- In groups, evaluate the understanding of the wheel balancing machine.
- Complete a class test before advancing to the next topic.

<table>
<thead>
<tr>
<th>SUBJECT OUTCOME</th>
<th>Balance a wheel.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSESSMENT STANDARDS</td>
<td>LEARNING OUTCOMES</td>
</tr>
<tr>
<td>• Vehicle is raised according to appropriate lifting procedures.</td>
<td>• Interpret and apply information on computer storage systems.</td>
</tr>
<tr>
<td>• Appropriate tools and equipment are selected.</td>
<td>• Inspect rims and tyres for damage and wear.</td>
</tr>
<tr>
<td>• The wheel is removed according to workshop manual procedures.</td>
<td>• Mount the wheel on the machine.</td>
</tr>
<tr>
<td>• The wheel is mounted to the wheel balancing machine without damage to tyre or rim.</td>
<td>• Static balance of the wheel.</td>
</tr>
<tr>
<td>• The value and position of the balancing weight is determined and fitted according to requirements.</td>
<td>• Dynamic balance of the wheel.</td>
</tr>
<tr>
<td>• The wheel is balanced according to workshop manual procedures.</td>
<td></td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

- Evaluate practical exercises on preparation of wheel balancing.
- In groups, evaluate the understanding of wheel balancing.
- Complete a class test before advancing to the next topic.

<table>
<thead>
<tr>
<th>SUBJECT OUTCOME</th>
<th>Apply safety procedures relating to wheel balancing.</th>
</tr>
</thead>
</table>
### ASSESSMENT STANDARDS

- The vehicle is raised according to appropriate lifting procedures.
- Safety and operational conditions of wheel balancing are established.
- All SHE procedures are followed during balancing task.

### LEARNING OUTCOMES

- Identify tyre size and inflation
- Adhere to safety rules and regulations.
- Adhere to service and flat rate schedules.

### ASSESSMENT TASKS OR ACTIVITIES

- Complete a class test before advancing to the next topic.

---

### SUBJECT OUTCOME

**Restore vehicle and work area.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The vehicle is parked in the demarcated area.</td>
<td>Ensure the vehicle is parked in the demarcated area.</td>
</tr>
<tr>
<td>The vehicle is raised.</td>
<td>Raise the vehicle.</td>
</tr>
<tr>
<td>The wheels are removed.</td>
<td>Remove the wheels.</td>
</tr>
</tbody>
</table>

### ASSESSMENT TASKS OR ACTIVITIES

- Complete a class test before advancing to the next topic.

---

**Topic 3: Select and Use Vehicle Lifting Equipment**

### SUBJECT OUTCOME

**Discuss the basic operation of automobile lifting equipment.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The operation of a two-post hoist, four-post hoist, hydraulic jacks, safety trestles (stands) and creepers are discussed and performed.</td>
<td>Discuss the use of a jack and a hoist.</td>
</tr>
<tr>
<td>Range: hydraulic jack, two post and four post hoist</td>
<td>Operate electrical lifting equipment.</td>
</tr>
<tr>
<td>Operate hydraulic lifting equipment.</td>
<td>Select correct lifting equipment according to size and weights.</td>
</tr>
</tbody>
</table>

### ASSESSMENT TASKS OR ACTIVITIES

- Assignment or case studies
- Evaluation of students’ feedback

---

**Identify and explain the function of various components related to hoists.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The functions of all the lifting equipment components are explained.</td>
<td>Identify and describe the components of hoists.</td>
</tr>
<tr>
<td>Explain the functions of the components of the hoists.</td>
<td></td>
</tr>
</tbody>
</table>

### ASSESSMENT TASKS OR ACTIVITIES

- Assignment or case studies
- Evaluation of students’ feedback

---

**Carry out precautionary measures before operating a hoist.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>All precautionary measures before operating a hoist are adhered to and performed.</td>
<td>Describe the necessary precaution s to take before operating a hoist.</td>
</tr>
<tr>
<td>Operate the hoist correctly.</td>
<td></td>
</tr>
</tbody>
</table>
• Operate lifting equipment safely

**ASSESSMENT TASKS OR ACTIVITIES**

• Evaluate practical exercises on the preparation of the lifting machine.
• In groups, evaluate the understanding of lifting machines.
• Complete a class test before advancing to the next topic.

---

### Subject Outcome

**Operate a hoist, a jack and a creeper and a safety stand**

**ASSESSMENT TASKS OR ACTIVITIES**

• Practical activities and exercises
• Assignment or case studies
• Evaluation of students’ feedback

---

### Topic 4: Carry Out a Service

**Subject Outcome**

**Plan and prepare for servicing tasks.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service tasks are planned and prepared.</td>
<td>Obtain appropriate fluids, lubricants and parts.</td>
</tr>
<tr>
<td>Vehicle is cleaned prior to servicing.</td>
<td>Obtain appropriate tools and equipment.</td>
</tr>
<tr>
<td>Appropriate service data, tools, equipment and parts are obtained.</td>
<td>Use the timing light correctly</td>
</tr>
<tr>
<td>Practical activities and exercises</td>
<td>Adhere to safety rules and regulations e.g. the Occupational Health and Safety Act (Act 85 of 1993) and company policies and procedures.</td>
</tr>
<tr>
<td>Assignment or case studies</td>
<td>Obtain appropriate personal protective equipment.</td>
</tr>
<tr>
<td>Evaluation of students’ feedback</td>
<td>Adhere to service and flat rate schedules.</td>
</tr>
<tr>
<td></td>
<td>Prepare work area and vehicle.</td>
</tr>
<tr>
<td></td>
<td>Carry out a pre-delivery inspection (PDI).</td>
</tr>
<tr>
<td></td>
<td>Inspect the exterior and interior of the vehicle</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

• Assignment or case studies
• Evaluation of students’ feedback

---

**Subject Outcome**

**Service a vehicle.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle systems are normalised.</td>
<td>Carry out a pre-delivery inspection (PDI).</td>
</tr>
<tr>
<td>Fluids are drained and refilled according to workshop manual procedures.</td>
<td>Inspect vehicle exterior and interior.</td>
</tr>
<tr>
<td>Service is performed according to service schedule.</td>
<td>Carry out pre-operative checks of vehicle systems and components.</td>
</tr>
<tr>
<td>Tools and equipment are used according to workshop procedures.</td>
<td>Carry out a minor service on a motor vehicle.</td>
</tr>
<tr>
<td>Vehicle systems are visually inspected for leaks and a post-operational check is performed.</td>
<td>Inspect the passenger compartment.</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

• Evaluate practical exercises on the preparation for a vehicle service.
In groups, evaluate the understanding of vehicle services.
Complete a class test before advancing to the next topic.

**SUBJECT OUTCOME**
Perform quality checks after the completed service.

**ASSESSMENT STANDARDS**
- A post-operational check is performed.
- Conformance to the service schedule is confirmed by visually inspecting the vehicle for any leaks.
- The vehicle is road tested.

**LEARNING OUTCOMES**
- Perform a post-operational check.
- Confirm conformance to the service schedule by visually inspecting the vehicle for any leaks.
- Road test the vehicle.

**ASSESSMENT TASKS OR ACTIVITIES**
- Evaluate practical exercises on the preparation for a vehicle service.
- In groups, evaluate the understanding of vehicle services.
- Complete a class test before advancing to the next topic.

**SUBJECT OUTCOME**
Restore work area and complete documentation.

**ASSESSMENT STANDARDS**
- Hazardous materials are disposed of in accordance with environmental requirements.
- Applicable health, safety and environmental procedures are adhered to.

**LEARNING OUTCOMES**
- Clean the interior and exterior of the vehicle.
- Clean the work area and ensure that all spilt fluids and lubricants have been wiped up and that the surface is dry.
- Dispose of all waste materials, fluids, lubricants, filters and other rubbish according to safety, health and environmental procedures.
- Clean all tools and equipment that were used and store them in their appropriate storage area according to company procedures.

**ASSESSMENT TASKS OR ACTIVITIES**
- Evaluate practical exercises on the preparation for a vehicle service.
- In groups, evaluate the understanding of vehicle services.
- Complete a class test before advancing to the next topic.

**SUBJECT OUTCOME**
Discuss and explain reasons for servicing vehicles.

**ASSESSMENT STANDARDS**
- Job cards and reports are correctly completed and processed.

**LEARNING OUTCOMES**
- Compile a report detailing all activities performed during the service.
- Include the readings of any leaks and defects that were identified during the inspection.
- Complete and submit the job card and checklist with the report to the appropriate personnel for costing.

**ASSESSMENT TASKS OR ACTIVITIES**
- Evaluate practical exercises on the preparation for a vehicle service.
- In groups, evaluate the understanding of vehicle services.
- Complete a class test before advancing to the next topic.

**Topic 5: Remove, Test, Fit and Service Automobile Batteries**

**SUBJECT OUTCOME**
Explain, discuss and demonstrate the removal and fitting of an automobile battery.
### ASSESSMENT STANDARD
- Automobile batteries are removed and fitted safely according to worksite and manufacturer procedures.

### LEARNING OUTCOMES
- Understand basic electricity.
- Identify electrical symbols and circuits.
- Understand magnetism.
- Understand induced electricity.
- Understand laws relating to basic electricity.
- Understand legislation and documentation concerning the battery.

### ASSESSMENT TASKS OR ACTIVITIES
- Evaluate practical exercises with batteries.
- In groups, evaluate the understanding of batteries.
- Complete a class test before advancing to the next topic.

### SUBJECT OUTCOME
Test automobile batteries.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing procedures are carried out correctly and testing methods are applied accurately.</td>
<td>Perform a visual inspection on a battery. Perform a battery leakage test. Perform a battery terminal test. Perform a battery voltage test. Test the battery with a hydrometer. Load test a battery (battery capacity test). Perform a three-minute charge test (sulphation test). Perform voltage drop tests.</td>
</tr>
</tbody>
</table>

### ASSESSMENT TASKS OR ACTIVITIES
- Evaluate practical exercises with batteries.
- In groups, evaluate the understanding of batteries.
- Complete a class test before advancing to the next topic.

### SUBJECT OUTCOME
Service automobile batteries.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servicing of battery is carried out according to workshop procedures. Battery charging is carried out in a safe manner.</td>
<td>Prepare for work activity. Perform the battery charging procedure.</td>
</tr>
</tbody>
</table>

### ASSESSMENT TASKS OR ACTIVITIES
- Evaluate practical exercises with batteries.
- In groups, evaluate the understanding of batteries.
- Complete a class test before advancing to the next topic.

### SUBJECT OUTCOME
Discuss and explain automobile battery-related topics.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>New batteries are ordered. Equipment and chemicals are cleaned and stored. Automobile battery-related topics, including chemical reaction (conversion of chemical energy into electrical energy), cells in series and parallel, internal resistance, amp-hour rating, specific gravity (SG), documentation and safety concepts, are discussed. Battery discharging, charging and recharging are performed.</td>
<td>Order new batteries. Clean and store tools, equipment and chemicals. Identify different types of batteries Identify battery components Describe battery accessories Identify and describe different Battery ratings Explain influence of temperature on battery efficiency Identify subject gravity of electrolyte Describe electrolysis or chemical process Perform battery discharging Perform battery recharging</td>
</tr>
</tbody>
</table>

Department of Education
• Perform battery charging

ASSESSMENT TASKS OR ACTIVITIES
• Evaluate practical exercises with batteries.
• In groups, evaluate the understanding of batteries.
• Complete a class test before advancing to the next topic.

SUBJECT OUTCOME
Use and complete relevant documentation

ASSESSMENT STANDARDS
• Relevant documentation is correctly filled in.

LEARNING OUTCOMES
• Issue battery warranty documentation. This serves to indicate the warranty period and conditions. In some cases, instead of issuing a warranty document, a receipt is used and a serial number is stamped onto the battery. This serial number contains the date and place of purchase and it can be referenced for warranty purposes.

ASSESSMENT TASKS OR ACTIVITIES
• Evaluate practical exercises with batteries.
• In groups, evaluate the understanding of batteries.
• Complete a class test before advancing to the next topic.

Topic 6: Inspect and Lubricate an Automotive System

SUBJECT OUTCOME
Discuss and explain reasons and purpose for lubrication.

ASSESSMENT STANDARDS
• Lubrication points are cleaned prior to lubrication.
• Lubricants are applied to lubrication points according to workshop manual procedures.
• The relationship between preventative maintenance and the operational condition of vehicle is explained.

LEARNING OUTCOMES
• Adhere to service and flat rate schedules.
• Understand applicable lubrication theory.
• Understand the different types of fluid and lubricant.
• Understand the fundamentals of lubrication.
• Understand the names and functions of vehicle components and systems involved in a fluid or lubrication service.
• Explain the relationship between preventative maintenance and the operational condition of vehicle

ASSESSMENT TASKS OR ACTIVITIES
• Evaluate practical exercises on lubrication.
• In groups, evaluate the understanding of lubrication.
• Complete a class test before advancing to the next topic.

SUBJECT OUTCOME
Plan and prepare to inspect and lubricate the vehicle

ASSESSMENT STANDARDS
• Work area is prepared.
• Workshop manual and specifications appropriate to vehicle are obtained.
• Specified lubricants and fluids are obtained.
• Appropriate tools and equipment are selected.

LEARNING OUTCOMES
• Obtain, read and interpret task instructions or job card and lubrication checklist.
• Obtain specified fluids and lubricants.
• Obtain appropriate tools and equipment.
• Adhere to safety rules and regulations.
• Prepare the work area.
• Adhere to service and flat rate schedules.

ASSESSMENT TASKS OR ACTIVITIES
• Evaluate practical exercises on lubrication.
In groups, evaluate the understanding of lubrication.
Complete a class test before advancing to the next topic.

### SUBJECT OUTCOME

**Drain, refill or top up fluids and apply lubricants.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drain and refill plugs are replaced according to workshop manual procedure.</td>
<td>Inspect vehicle's fluid levels.</td>
</tr>
<tr>
<td>Drained compartments are refilled with specified fluid and quantity.</td>
<td>Change engine oil and filter.</td>
</tr>
<tr>
<td>Lubrication points are cleaned prior to lubrication.</td>
<td>Change automatic transmission fluid and filter.</td>
</tr>
<tr>
<td>Lubricants are applied to lubrication points according to workshop manual procedures.</td>
<td>Inspect a vehicle for and locate fluid leaks and defects.</td>
</tr>
<tr>
<td>Fluid levels are checked and topped up to workshop manual indicator levels.</td>
<td>Apply lubricants or grease to lubrication or grease points.</td>
</tr>
<tr>
<td>Vehicle is normalised to operating temperature prior to draining.</td>
<td></td>
</tr>
</tbody>
</table>

### ASSESSMENT TASKS OR ACTIVITIES

- Evaluate practical exercises on lubrication.
- In groups, evaluate the understanding of lubrication.
- Complete a class test before advancing to the next topic.

### SUBJECr OUTCOME

**Identify and inspect leaks and defects.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle is physically inspected for leaks and defects on serviced areas and findings are recorded.</td>
<td>Inspect briefly the under-body, paying particular attention to the common areas where leaks occur.</td>
</tr>
<tr>
<td>Vehicle is inspected for leaks under operational conditions and findings are recorded.</td>
<td>Range: The sump, clutch housing, steering gearbox, dampers and drive shafts</td>
</tr>
<tr>
<td></td>
<td>Look for leaks upwards and forwards from where the fluid is found.</td>
</tr>
</tbody>
</table>

### ASSESSMENT TASKS OR ACTIVITIES

- Practical assignment to assess the correct and accurate inspection of leaks and defects.

### SUBJECT OUTCOME

**Restore work area.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areas are cleaned before and after draining fluids</td>
<td>Clean the work area and ensure that all spilt fluids and lubricants have been wiped up and that the surface is dry.</td>
</tr>
<tr>
<td></td>
<td>Dispose of all waste materials, fluids, lubricants, filters and other rubbish according to safety, health and environmental procedures. Usually, designated disposal areas are provided for hazardous goods.</td>
</tr>
<tr>
<td></td>
<td>Clean all tools and equipment that were used and store them in their appropriate storage area according to company procedures.</td>
</tr>
</tbody>
</table>

### ASSESSMENT TASKS OR ACTIVITIES

- Evaluate practical exercises on draining, refilling or topping up fluids or lubricants.

### SUBJECT OUTCOME

**Complete and process documentation.**
### ASSESSMENT STANDARDS | LEARNING OUTCOME
---|---
- A report detailing all activities performed during the lubrication service is compiled.  
- Complete and submit the job card and checklist with the report to the appropriate personnel for costing. |  
- Compile a report detailing all activities performed during the lubrication service.  
- Include any leaks and defects that were found during the inspection.  
- Complete and submit the job card and checklist with the report to the appropriate personnel for costing.

### ASSESSMENT TASKS OR ACTIVITIES
- Practical exercises in the completion of documents for assessment.

---

**Topic 7: Adjust Headlights**

### SUBJECT OUTCOME
**Plan for the adjusting of headlights.**

| ASSESSMENT STANDARDS | LEARNING OUTCOME |
---|---|
- Setting specifications are obtained in the workshop manual.  
- The operation of the vehicle’s light beams is checked.  
- The charging system and condition of the battery are checked to conform to workshop manual specifications. |  
- Obtain task instructions or job card and relevant specifications.  
- Name the headlight components and explain their functions.  
- Adjust headlights according to workshop manual procedures.

### ASSESSMENT TASKS OR ACTIVITIES
- Evaluate practical exercises on headlights.  
- In groups, evaluate the understanding of headlights.  
- Complete a class test before advancing to the next topic.

---

**SUBJECT OUTCOME**

**Prepare the vehicle and headlight aimer**

| ASSESSMENT STANDARDS | LEARNING OUTCOME |
---|---|
- The worksite and vehicle is prepared for work activity. |  
- Prepare the worksite and vehicle for work activity.  
- Ensure that appropriate tools, testing equipment and consumables are at the workstation.  
- Workshop or service manuals  
- Beam setting equipment

### ASSESSMENT TASKS OR ACTIVITIES
- Evaluate practical exercises on headlights.  
- In groups, evaluate the understanding of headlights.  
- Complete a class test before advancing to the next topic.

---

**SUBJECT OUTCOME**

**Adjust the headlights.**

| ASSESSMENT STANDARDS | LEARNING OUTCOME |
---|---|
- The appropriate tools and equipment are used to adjust the headlights to meet specifications. |  
- Remove and replace a sealed beam.  
- Remove and replace a headlight bulb.  
- Remove and replace a rear light assembly.  
- Remove and replace a number plate light(s).  
- Remove and replace a front fog lamp.

### ASSESSMENT TASKS OR ACTIVITIES
- Evaluate practical exercises on headlights.  
- In groups, evaluate the understanding of headlights.  
- Complete a class test before advancing to the next topic.
SUBJECT OUTCOME

Restore the work area.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Work area and tools are cleaned and tools are stored.</td>
<td>• Clean and pack away all the tools used.</td>
</tr>
<tr>
<td></td>
<td>• Store equipment in the correct place.</td>
</tr>
<tr>
<td></td>
<td>• Clean the work area and ensure that surfaces are dry.</td>
</tr>
</tbody>
</table>

ASSESSMENT TASKS OR ACTIVITIES

• Evaluate practical exercises on headlights.
• In groups, evaluate the understanding of headlights.
• Complete a class test before advancing to the next topic.

SUBJECT OUTCOME

Complete and process documentation.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A report detailing and justifying the activities performed is written and submitted.</td>
<td>• Write a report detailing and justifying the activities performed.</td>
</tr>
<tr>
<td></td>
<td>• Submit the report to the relevant personnel for verification.</td>
</tr>
</tbody>
</table>

ASSESSMENT TASKS OR ACTIVITIES

• Evaluate practical exercises on headlights aimer.
• In groups, evaluate the understanding of headlights aimer.
• Complete a class test before advancing to the next topic.

Topic 8: Dismantle Vehicle Components

SUBJECT OUTCOME

Plan the procedure for dismantling and prepare the components and workplace.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Components are prepared and cleaned.</td>
<td>• Obtain, read and interpret task instructions.</td>
</tr>
<tr>
<td></td>
<td>• Determine sequence of operations.</td>
</tr>
<tr>
<td></td>
<td>• Be aware of service flat rate schedules and time.</td>
</tr>
<tr>
<td></td>
<td>• Identify and obtain appropriate tools and equipment allocations.</td>
</tr>
<tr>
<td></td>
<td>• Adhere to safety rules and regulations.</td>
</tr>
<tr>
<td></td>
<td>• Prepare the work area.</td>
</tr>
<tr>
<td></td>
<td>• Prepare the components for dismantling.</td>
</tr>
</tbody>
</table>

ASSESSMENT TASKS OR ACTIVITIES

• Practical exercises in the completion of documents for assessment

SUBJECT OUTCOME

Dismantle engine components and prepare for inspection and evaluation.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Components are dismantled.</td>
<td>• Prepare the engine components for dismantling.</td>
</tr>
<tr>
<td>• Component parts are prepared for inspection and evaluation.</td>
<td>• Dismantle the vehicle components.</td>
</tr>
<tr>
<td></td>
<td>• Prepare parts for inspection and evaluation.</td>
</tr>
<tr>
<td></td>
<td>• Process identified serviceable and non-serviceable parts.</td>
</tr>
</tbody>
</table>

ASSESSMENT TASKS OR ACTIVITIES

• Evaluate practical exercises on engine components.
• In groups, evaluate the understanding of engine components.
Discuss and explain procedures followed to dismantle components.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasons for laying out parts in sequence of dismantling are explained.</td>
<td>Prepare the engine components for dismantling.</td>
</tr>
<tr>
<td>An understanding of the procedures for processing unserviceable parts is demonstrated</td>
<td>Dismantle the vehicle components.</td>
</tr>
<tr>
<td></td>
<td>Prepare parts for inspection and evaluation.</td>
</tr>
<tr>
<td></td>
<td>Process identified serviceable and non-serviceable parts.</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

- Evaluate practical exercises on dismantling components.
- In groups, evaluate the understanding of dismantling components.
- Complete a class test before advancing to the next topic.

---

**SUBJECT OUTCOME**

Identify mechanical or electrical components to be removed or fitted.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components are correctly identified.</td>
<td>Understand basic auto-electrical theory.</td>
</tr>
<tr>
<td></td>
<td>Understand basic auto-electrical circuits and symbols.</td>
</tr>
<tr>
<td></td>
<td>Plan and prepare to build an auto-electrical circuit.</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

- Evaluate practical exercises on auto-electrical circuits.
- In groups, evaluate the understanding of auto-electrical circuits.
- Complete a class test before advancing to the next topic.

---

**SUBJECT OUTCOME**

Select and use correct tools for fitting and removing automobile components.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant documentation for components to be removed and fitted are obtained and completed.</td>
<td>Obtain and complete relevant documentation for components to be removed and fitted.</td>
</tr>
<tr>
<td>Appropriate tools, equipment, fasteners, locking devices and strapping are identified and obtained.</td>
<td>Identify, obtain and use appropriate tools, equipment, fasteners, locking devices and strapping.</td>
</tr>
<tr>
<td>Mechanical and electrical automobile components are removed and fitted.</td>
<td>Adhere to safety rules and regulations.</td>
</tr>
<tr>
<td></td>
<td>Remove and fit mechanical and electrical automobile components.</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

- Evaluate practical exercises on automobile and personal protection equipment.
- In groups, evaluate the understanding of automobile and personal protection equipment.
- Complete a class test before advancing to the next topic.

---

**SUBJECT OUTCOME**

Select and use fasteners, locking devices and strapping.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fasteners, locking devices and strapping are correctly selected and used.</td>
<td>Select and use fasteners, locking devices and strapping correctly.</td>
</tr>
</tbody>
</table>

**ASSESSMENT TASKS OR ACTIVITIES**

- Evaluate practical exercises on automobile and personal protection equipment.
- In groups, evaluate the understanding of automobile and personal protection equipment.
- Complete a class test before advancing to the next topic.
• Evaluate practical exercises on fasteners, locking devices and strapping.
• In groups, evaluate the understanding of fasteners, locking devices and strapping.
• Complete a class test before advancing to the next topic.

SUBJECT OUTCOME

Remove and fit automobile components.

ASSESSMENT STANDARDS

• Automotive components are removed and fitted according to procedures.
• Refitted components are tested according to procedures.
• Automobile is inspected for damage.

LEARNING OUTCOMES

• Remove the starter motor.
• Remove and replace the solenoid from the starter motor.
• Replace the starter motor.
• Remove and replace the alternator.
• Remove and replace the radiator.
• Remove and fit a serviceable fuel pump.
• Remove and replace a turbo-charger.
• Remove and replace a diesel fuel injection pump.
• Remove and replace the ignition coil.
• Remove and replace an electric window lifter and door lock.
• Remove a front and rear wiper motor and linkage.
• Remove and replace a windscreen washer and pump.
• Fit front and rear speakers.
• Remove and replace an interior fan.

ASSESSMENT TASKS OR ACTIVITIES

• Evaluate practical exercises on refitted components.
• In groups, evaluate the understanding of refitted components.
• Complete a class test before advancing to the next topic.

SUBJECT OUTCOME

Test fitted and associated mechanical and electrical automobile components.

ASSESSMENT STANDARDS

• Fitted mechanical and electrical automobile components are tested.
• Manufacturers and workshop procedures are followed.

LEARNING OUTCOMES

• Visually inspect all the components, once fitted, for correct alignment and damage.
• Test the components according to the manufacturer's requirements to ensure proper functionality of the components.

ASSESSMENT TASKS OR ACTIVITIES

• Evaluate practical exercises on fitted mechanical and electrical automobile components.
• In groups, evaluate the understanding of fitted mechanical and electrical automobile components.
• Complete a class test before advancing to the next topic.

SUBJECT OUTCOME

Use and complete relevant documentation.

ASSESSMENT STANDARD

• Relevant documentation is completed according to workshop procedures.

LEARNING OUTCOME

• Restore the work area and complete relevant documentation.

ASSESSMENT TASKS OR ACTIVITIES

• Practical exercises in the completion of documents for assessment
4 SPECIFICATIONS FOR EXTERNAL ASSESSMENT IN AUTOMOTIVE REPAIR AND MAINTENANCE – LEVEL 2

4.1 Integrated summative assessment task (ISAT)
A compulsory component of the external assessment (ESASS) is the **integrated summative assessment task (ISAT)**. The integrated summative assessment task (ISAT) draws on the students’ cumulative learning achieved throughout the year. The task requires **integrated application of competence** and is executed and recorded in compliance with assessment conditions.

Two approaches to the integrated summative assessment task (ISAT) may be as follows:

The students are assigned a task at the beginning of the year which they will have to complete in phases throughout the year to obtain an assessment mark. A final assessment is made at the end of the year when the task is completed.

OR

Students achieve the competencies throughout the year but the competencies are assessed cumulatively in a single assessment or examination session at the end of the year.

The integrated summative assessment task (ISAT) is set by an externally appointed examiner and is conveyed to colleges in the first quarter of the year.

The integrated assessment approach enables students to be assessed in more than one subject with the same integrated summative assessment task (ISAT).

4.2 National Examination
A National Examination is conducted annually in October or November by means of a paper(s) set and moderated externally. The following distribution of cognitive application should be followed:

<table>
<thead>
<tr>
<th>LEVEL 2</th>
<th>KNOWLEDGE AND COMPREHENSION</th>
<th>APPLICATION</th>
<th>ANALYSIS, SYNTHESIS AND EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>35%</td>
<td>40%</td>
<td>25%</td>
<td></td>
</tr>
</tbody>
</table>