



education

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NATIONAL CERTIFICATES (VOCATIONAL)

ASSESSMENT GUIDELINES

ELECTRICAL SYSTEMS AND CONSTRUCTION NQF LEVEL 2

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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 Electrical Systems and Construction 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: Electrical Systems and Construction* to prepare for and deliver Electrical Systems and Construction. 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 assessor; 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.

LECTURER ASSESSMENT	The lecturer assesses students' performance against given criteria in different contexts, such as individual work, group work, etc.
SELF-ASSESSMENT	Students assess their own performance against given criteria in different contexts, such as individual work, group work, etc.
PEER ASSESSMENT	Students assess another student or group of students' performance against given criteria in different contexts, such as individual work, group work, etc.
GROUP ASSESSMENT	Students assess the individual performance of other students within a group or the overall performance of a group of students against given criteria.

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		
	Observation-based (Less structured)	Task-based (Structured)	Test-based (More structured)
Assessment instruments	<ul style="list-style-type: none"> • Observation • Class questions • Lecturer, student, parent discussions 	<ul style="list-style-type: none"> • Assignments or tasks • Projects • Investigations or research • Case studies • Practical exercises • Demonstrations • Role-play • Interviews 	<ul style="list-style-type: none"> • Examinations • Class tests • Practical examinations • Oral tests • Open-book tests
Assessment tools	<ul style="list-style-type: none"> • Observation sheets • Lecturer's notes • Comments 	<ul style="list-style-type: none"> • Checklists • Rating scales • Rubrics 	<ul style="list-style-type: none"> • Marks (e.g. %) • Rating scales (1-7)
Evidence	<ul style="list-style-type: none"> • Focus on individual students • Subjective evidence based on lecturer observations and impressions 	<p>Open middle: Students produce the same evidence but in different ways.</p> <p>Open end: Students use same process to achieve different results.</p>	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 ELECTRICAL SYSTEMS AND CONSTRUCTION

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 Electrical Systems and Construction 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

Electrical Systems and Operations, as is the case for all the other Vocational subjects, is assessed according to five levels of competence. The level descriptions are explained in the following table.

Scale of Achievement for the Vocational component

RATING CODE	RATING	MARKS %
5	Outstanding	80-100
4	Highly competent	70-79
3	Competent	50-69
2	Not yet competent	40-49
1	Not achieved	0-39

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.

ASSESSMENT OF ELECTRICAL SYSTEMS AND CONSTRUCTION

LEVEL 2

3 INTERNAL ASSESSMENT OF SUBJECT OUTCOMES IN ELECTRICAL SYSTEMS AND ELECTRICAL CONSTRUCTION – LEVEL 2

Topic 1: Basic Electrical Circuits and Systems

SUBJECT OUTCOME	
<p>Test, install or replace basic electrical circuits and systems:</p> <p>a. A distribution board (single phase typically found in average household)</p> <p>b. Entry to a dwelling (cables and conductors)</p> <p>c. A prepaid metering unit</p> <p>d. House wiring (single phase only)</p> <p>e. Earthing and bonding on electrical installations</p> <p>f. Low voltage transformers</p> <p>g. Electric metering units or measuring instruments(including but not limited to prepaid metering units)</p>	
ASSESSMENT STANDARD	LEARNING OUTCOMES
<ul style="list-style-type: none"> Basic electrical circuits and systems are effectively tested, installed or replaced. 	<ul style="list-style-type: none"> Read and interpret electrical circuit diagrams and related symbols correctly. Document the planning of the job according to accepted standards. Adhere to working practices during the project. Do electrical installations according to relevant SABS regulations on domestic installations. Test the installation according to relevant SABS regulations on domestic installations. (Faults are simulated and the student does fault-finding and reports on the outcome.) Ensure that electrical installations function and meet requirements. Work done is of an acceptable standard and worksite is left neat and tidy. Test, install or replace a distribution board. Test, install or replace entry to a dwelling. Test, install, replace, commission or maintain a prepaid metering unit. Test, install or replace earthing and bonding on electrical installations. Test, install or replace low voltage transformers. Test, install or replace electric metering units or measuring instruments. Test, install or replace a prepaid metering unit. Test, install or replace a luminaire unit.
ASSESSMENT TASKS OR ACTIVITIES	
<p>Assessment tasks or activities include but are not limited to:</p> <ul style="list-style-type: none"> Students test, install, replace, commission or maintain basic electrical circuits and systems. An oral or written test precedes the practical assessment. Students are tested on interpretation of regulations, task requirements, understanding of drawings and the execution of the task. Students draw or interpret plans and produce a list of required components, tools and instruments to successfully execute the task. The task can be done in a "Simulated Environment". Students must be informed on all points of assessment, for example, neatness counts 5%. External exam: Students are tested on their understanding of circuit design, electrical components, instrument use, wiring code specifications, regulations, safety requirements, testing procedures, administrative work, etc. This written exam does not include a practical assessment. 	

Topic 2: Wire Ways and Low Voltage Cables

SUBJECT OUTCOME	
Join low voltage cables.	
<i>Range: a) Cables include armoured cables and cables under tension, b) terminations include lugs and terminal blocks and c) joining includes screw-its, connecting block and jointing kits</i>	
ASSESSMENT STANDARD	LEARNING OUTCOMES
<ul style="list-style-type: none"> Low voltage cables are effectively joined. 	<ul style="list-style-type: none"> State types of joints commonly used to join low voltage electric cords, conductors and electric cables. State various joining methods commonly used to join low voltage electric cords, conductors and electric cables. Illustrate with the aid of sketches how armoured cables and cables under tension are joined. Select the most suitable joining procedure for the application. Join the cable, inspect and test the joint, clean the work area and store equipment correctly. Join and solder multi-strand insulated conductors. Use terminal blocks and screw-its for joining. Use a joining kit to join an un-armoured cable.
ASSESSMENT TASKS OR ACTIVITIES	
<p>Assessment tasks or activities include but are not limited to:</p> <ul style="list-style-type: none"> Students' understanding of low voltage electric cords, conductors and electric cables, methods commonly used for joining them, the equipment required and safety aspects are tested verbally or in writing. Students join low voltage cables. Joining can be done on sample cords, conductors and electric cables in a training facility. Work done must comply with SANS 10142 and SANS 10198. External exam: Students complete a written exam. The exam does not include a practical assessment. 	

SUBJECT OUTCOME	
Know the purpose and design of wire ways.	
ASSESSMENT STANDARD	LEARNING OUTCOMES
<ul style="list-style-type: none"> The purpose and design of wire ways are understood. 	<ul style="list-style-type: none"> State the purpose of wire ways. Identify wire ways and know how cabling is installed.
ASSESSMENT TASKS OR ACTIVITIES	
<p>Assessment tasks or activities include but are not limited to:</p> <ul style="list-style-type: none"> Students' understanding of the purpose and design of wire ways is tested verbally or in writing. Students also interpret SANS 10142 regulation 6.5 on wire ways. 	

Topic 3: Electric Machines

SUBJECT OUTCOME
<p>Identify, inspect, clean and electrically connect and disconnect an electric machine.</p> <p><i>Range: a) DC and AC machines not exceeding 10kW and b) excludes machine installation</i></p>

ASSESSMENT STANDARD	LEARNING OUTCOMES
<ul style="list-style-type: none"> A small electric machine is effectively identified, inspected, cleaned and electrically connected and disconnected. 	<ul style="list-style-type: none"> State statutory requirements when working on electrical machinery. Reproduce typical connection diagrams, showing the connections to the supply or load. Identify types of machine by supply or load connections, types of application, terminal layout, ID plate and visual appearance. List electrical inspection procedures when working on electrical machinery. List mechanical inspection procedures when working on electrical machinery. Clean electrical machinery using acceptable methods. Apply labelling before electrical disconnection and remove labelling after connection.
ASSESSMENT TASKS OR ACTIVITIES	
<p>Assessment tasks or activities include but are not limited to:</p> <ul style="list-style-type: none"> Students' understanding of connection diagrams, electrical components, instrument use, wiring code specifications, regulations, safety requirements, testing procedures, administrative work, etc. is tested verbally or in writing. Students identify, inspect, clean and electrically connect or disconnect an electric machine. External exam: Students complete a written exam. The exam does not include a practical assessment. 	

Topic 4: Fault-finding and Testing

SUBJECT OUTCOME	
<p>Test and find the faults in electrical components.</p> <p><i>Range: Includes but is not limited to a) continuity tests, b) deviations from manufacturer's specifications and c) whether component is operational or functioning</i></p>	
ASSESSMENT STANDARD	LEARNING OUTCOMES
<ul style="list-style-type: none"> Basic electrical components are effectively tested to find faults. 	<ul style="list-style-type: none"> List the possible tests that can be carried out on the components. Explain how to test and find faults in electrical components (fuses, circuit breakers, thermostats, luminaires, transformers, cabling, switches, earth leakage relays and isolators). Test fuses, circuit breakers and switches. Test cabling and insulation. Test thermostats. Test luminaires. Test transformers. Test earth leakage relays and isolators. Understand if a component is faulty or functioning.
ASSESSMENT TASKS OR ACTIVITIES	
<p>Assessment tasks or activities include but are not limited to:</p> <ul style="list-style-type: none"> Students' understanding of connection diagrams, electrical components, instrument use, wiring code specifications, regulations, safety requirements, testing procedures, administrative work, etc. is tested verbally or in writing. Students test or find the faults in electrical components. External exam: Students complete a written exam. The exam does not include a practical assessment. 	

Topic 5: Protection and Measuring Instruments

SUBJECT OUTCOME	
<p>Install or replace electrical metering units or measuring instruments.</p> <p><i>Range:</i></p> <p><i>a. Installing and replacing under dead conditions only</i></p> <p><i>b. Preparation includes but is not limited to marking off, cutting, drilling and filling.</i></p> <p><i>c. Mounting includes but is not limited to direct on surface, din rail and embedded.</i></p> <p><i>d. Symbols and abbreviations include but are not limited to A = ammeter, V = voltmeter, kWh = kilowatt hour meter, Hz = frequency meter, PF = power factor meter, ECU = energy control unit and ED = electricity dispenser.</i></p> <p><i>e. Measuring instrument displays include but are not limited to analogue, digital and numeric types.</i></p> <p><i>f. Metering unit types include but are not limited to analogue, digital, numeric and magnetic types.</i></p>	
ASSESSMENT STANDARD	LEARNING OUTCOMES
<ul style="list-style-type: none"> Basic electrical metering units or measuring instruments are effectively installed or replaced. 	<ul style="list-style-type: none"> Plan to install and/or replace electrical metering units or measuring instruments. Interpret task requirements according to instructions and/or diagrams. Select and obtain as per specifications metering units or measuring instruments. Select tools and equipment according to job requirements. Identify correctly the location for mounting. Obtain authorisation for access to restricted areas and possible downtime. Obtain safety equipment and material required. Communicate working schedule to affected parties. Correctly prepare area for the mounting procedure. Mark off metering unit or measuring instrument dimensions as per specifications. Correctly select and use hand and power tools to meet the job requirements. Mount and secure metering unit or measuring instrument. Connect metering unit or measuring instrument as per instruction or specification. Adhere to safety precautions before, during and after the mounting procedure.
ASSESSMENT TASKS OR ACTIVITIES	
<p>Assessment tasks or activities include but are not limited to:</p> <ul style="list-style-type: none"> Students' understanding of connection diagrams, electrical components, instrument use, wiring code specifications, regulations, safety requirements, testing procedures, administrative work, etc. is tested verbally or in writing. Students install or replace electrical metering units or measuring instruments. Students draw or interpret plans and produce a list of required components, tools and instruments to successfully execute the task. The task can be done in a "Simulated Environment". Students must be informed on the points of assessment, for example, neatness counts 5%. 	
SUBJECT OUTCOME	
<p>Replace a metering unit or measuring instrument.</p>	

ASSESSMENT STANDARD	LEARNING OUTCOMES
<ul style="list-style-type: none"> A metering unit or measuring instrument is effectively replaced. 	<ul style="list-style-type: none"> Interpret job instructions and plan a sequence of operation. Carry out job tasks according to the sequence of events. Identify faulty meter and correctly select a replacement meter. Ensure circuit is isolated according to statutory requirements and worksite procedures. Adhere to safety precautions during the removing and replacing process. Correctly match connections. Replace and secure metering unit or measuring instrument according to specifications.
ASSESSMENT TASKS OR ACTIVITIES	
<p>Assessment tasks or activities include but are not limited to:</p> <ul style="list-style-type: none"> External exam: Students complete a written exam. The exam does not include a practical assessment. Students are tested on instrument use, wiring code specifications, regulations, safety requirements, testing procedures, administrative work, etc. 	

SUBJECT OUTCOME	
Complete the installation and/or replacement of a metering unit or measuring instrument on a panel.	
ASSESSMENT STANDARD	LEARNING OUTCOMES
<ul style="list-style-type: none"> The installation and/or replacement of a metering unit or measuring instrument on a panel is completed successfully. 	<ul style="list-style-type: none"> Ensure the re-energising of the circuit and verify the correct operation of the replaced metering unit or measuring instrument. Discard all waste materials or scrap materials and equipment as per environmental and safety policies and standards. Correctly check, clean and store all tools and equipment as per worksite standards and procedures. Restore workplace to original state as per housekeeping standards and worksite procedures and standards. Sign off and submit all relevant administration such as the job card.
ASSESSMENT TASKS OR ACTIVITIES	
<p>Assessment tasks or activities include but are not limited to:</p> <ul style="list-style-type: none"> Students are tested on the Learning Outcomes. 	

4 SPECIFICATION FOR EXTERNAL ASSESSMENT IN ELECTRICAL SYSTEMS AND CONSTRUCTION – 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:

LEVEL 2	KNOWLEDGE AND COMPREHENSION	APPLICATION	ANALYSIS, SYNTHESIS AND EVALUATION
	30 - 40%	50 - 60%	0 - 10%