



Federal Democratic Republic of Ethiopia
OCCUPATIONAL STANDARD

LEGAL METROLOGY SERVICE
NTQF Level II-V



*Ministry of Education
Febraury 2015*

Introduction

Ethiopia has embarked on a process of reforming its TVET-System. Within the policies and strategies of the Ethiopian Government, technology transformation – by using international standards and international best practices as the basis, and, adopting, adapting and verifying them in the Ethiopian context – is a pivotal element. TVET is given an important role with regard to technology transfer. The new paradigm in the outcome-based TVET system is the orientation at the current and anticipated future demand of the economy and the labor market.

The Ethiopia Occupational Standards (EOS) is the core element of the Ethiopian National TVET-Strategy and an important factor within the context of the National TVET-Qualification Framework (NTQF). They are national Ethiopian standards, which define the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account.

This document details the mandatory format, sequencing, wording and layout for the Ethiopia Occupational Standard which comprised of Units of Competence.

A Unit of Competence describes a distinct work activity. It is documented in a standard format that comprises:

- Occupational title and NTQF level
- Unit title
- Unit code
- Unit descriptor
- Elements and Performance criteria
- Variables and Range statement
- Evidence guide

Together all the parts of a Unit of Competence guide the assessor in determining whether the candidate is competent.

The ensuing sections of this EOS document comprise a description of the occupation with all the key components of a Unit of Competence:

- chart with an overview of all Units of Competence for the respective level (Unit of Competence Chart) including the Unit Codes and the Unit titles
- contents of each Unit of Competence (competence standard)
- occupational map providing the Technical and Vocational Education and Training (TVET) providers with information and important requirements to consider when designing training programs for this standards and for the individual, a career path

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|---------------|------------------------------------|--|----------------------------|
| Page 1 of 323 | Ministry of Education Copyright | Legal Metrology Service Ethiopian Occupational Standard | Version 1 February 2015 |
|---------------|------------------------------------|--|----------------------------|

UNIT OF COMPETENCE CHART

Occupational Standard: Legal Metrology Service

Occupational Code: TRD LMS

NTQF Level II

| | | |
|---|---|---|
| TRD LMS2 01 0215 Apply Safe Work Practices | TRD LMS2 02 0215 Verify Non-automatic Digital Weighing Instruments | TRD LMS2 03 0215 Verify Safety Measuring Instruments |
| TRD LMS2 04 0215 Verification of Liquid and Gas Flow Meter | TRD LMS2 05 0215 Verify Volume Measuring Instruments | TRD LMS2 06 0215 Apply Workplace Hygiene Procedures |
| TRD LMS2 07 0215 Operate and Maintain Equipment | TRD LMS2 08 0215 Participate in Environmentally Sustainable Work Practices | TRD LMS2 09 0215 Carry out Inspections and Monitoring under Guidance |
| TRD LMS2 10 0215 Produce Simple Word Processed Documents | TRD LMS2 11 0215 Create and Use Spreadsheets | TRD LMS2 12 0215 Participate in Workplace Communication |
| TRD LMS2 13 0215 Work in Team Environment | TRD LMS2 14 0215 Develop Business Practice | TRD LMS2 15 0215 Standardize and Sustain 3S |

NTQF Level III[TRD LMS3 01 0215](#)

Verify Density Measurements

[TRD LMS3 02 0215](#)

Verify Clinical Measurements

[TRD LMS3 03 0215](#)

Verify Agricultural Measurements

[TRD LMS3 04 0215](#)

Verify Automatic Weighing Instruments

[TRD LMS3 05 0215](#)

Verify Measurements in Road Traffic

[TRD LMS3 06 0215](#)

Perform Installation and Calibration of Measuring Instruments

[TRD LMS3 07 0215](#)

Test and Calibrate Instrumentation Systems and Equipment

[TRD LMS3 08 0215](#)

Perform Calibration Checks on Equipment and Assist with Its

[TRD LMS3 09 0215](#)

Inspect a Range of Simple Measuring Instruments

[TRD LMS3 10 0215](#)

Undertake Routine Inspections and Monitoring

[TRD LMS3 11 0215](#)

Apply Regulatory Powers

[TRD LMS3 12 0215](#)

Create and Use Databases

[TRD LMS3 13 0215](#)

Write Simple Documents

[TRD LMS3 14 0215](#)

Implement and Monitor Environmentally Sustainable Work Practices

[TRD LMS3 15 0215](#)

Monitor Implementation of Work Plan/Activities

[TRD LMS3 16 0215](#)

Apply Quality Control

[TRD LMS3 17 0215](#)

Lead Workplace Communication

[TRD LMS3 18 0215](#)

Lead Small Teams

[TRD LMS3 19 0215](#)

Improve Business Practice

[TRD LMS3 20 0215](#)

Prevent and Eliminate MUDA

NTQF Level IV

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|---|--|---|
| TRD LMS4 01 0215 Identify Risks and Apply Risk Management Process | TRD LMS4 02 0215 Conduct Pattern Evaluation and Approval | TRD LMS4 03 0215 Conduct Inspection of Measuring Instruments |
| TRD LMS4 04 0215 Conduct Inspection of Pre-packed Products | TRD LMS4 05 0215 Perform Verification of Electricity Meters | TRD LMS4 06 0215 Perform Standard Calibrations |
| TRD LMS4 07 0215 Use and Maintain Reference Standards in the Laboratory | TRD LMS4 08 0215 Apply Software Application to Verification Equipment | TRD LMS4 09 0215 Read and Interpret Basic Drawing and Specifications |
| TRD LMS4 10 0215 Collect Analyze and Present Data and Information | TRD LMS4 11 0215 Inspect a Range of Trading Practices | TRD LMS4 12 0215 Exercise Regulatory Powers |
| TRD LMS4 13 0215 Assess Compliance | TRD LMS4 14 0215 Act on Non-compliance | TRD LMS4 15 0215 Undertake Inspections and Monitoring |
| TRD LMS4 16 0215 Provide Technical Support in advanced Equipment Acquisition | TRD LMS4 17 0215 Process and Interpret Data | TRD LMS4 18 0215 Plan and Organize Work |
| TRD LMS4 19 0215 Migrate to New Technology | TRD LMS4 20 0215 Establish Quality Standards | TRD LMS4 21 0215 Develop Individuals and Team |

[TRD LMS4 22 0215](#)

Utilize Specialized
Communication Skills

[TRD LMS4 23 0215](#)

Manage Micro, Small and
Medium Enterprises
(MSMEs)

[TRD LMS4 24 0215](#)

Apply Problem Solving
Techniques and Tools

NTQF Level V

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|---|--|--|
| TRD LMS5 01 0215 Plan, Coordinate and Maintain legal metrology Systematic Approach | TRD LMS5 02 0215 Implement and Maintain Verification Laboratory Management System | TRD LMS5 03 0215 Evaluate and Review Compliance |
| TRD LMS5 04 0215 Develop a Workplace Learning Environment | TRD LMS5 05 0215 Meet Statutory and Organisation Information Requirements | TRD LMS5 06 0215 Inspect a Range of Complex Measuring Instruments |
| TRD LMS5 07 0215 Analyse Measurements and Estimate Uncertainties | TRD LMS5 08 0215 Supervise and Carry out Complex Inspections and Monitoring | TRD LMS5 09 0215 Analyze Data and Report Results |
| TRD LMS5 10 0215 Conduct Measurement Licensee Audit | TRD LMS5 11 0215 Apply Legal Principles in Corporation Law Matters | TRD LMS5 12 0215 Promote the Values and Ethos of Public Service |
| TRD LMS5 13 0215 Manage Project Quality | TRD LMS5 14 0215 Facilitate and Capitalize on Change and Innovation | TRD LMS5 15 0215 Manage Continuous Improvement Process (Kaizen) |

NTQF Level II

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|---------------|------------------------------------|--|----------------------------|
| Page 7 of 323 | Ministry of Education Copyright | Legal Metrology Service Ethiopian Occupational Standard | Version 1 February 2015 |
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| Occupational Standard: Legal Metrology Service Level II | |
|---|--|
| Unit Title | Apply Safe Work Practices |
| Unit Code | TRD LMS2 01 0215 |
| Unit Descriptor | This unit describes the performance outcomes, skills and knowledge required to apply safe work practices, including identifying and reporting faults and problems, according to Work Health and Safety (WHS) legislation and store policies. |

| Elements | Performance Criteria |
|-------------------------------------|---|
| 1. Apply basic safety procedures | <p>1.1 Safety procedures, including codes of practice relating to particular hazards in the industry or workplace are followed to achieve a safe work environment according to all relevant WHS legislation.</p> <p>1.2 Unsafe work practices, including faulty plant and equipment lifting standard weights and instrument without lifting devices are identified and reported according to store policy and procedures.</p> <p>1.3 Dangerous goods and substances are managed according to store policy and relevant legislation.</p> <p>1.4 Potential manual handling risks are identified and manual handling tasks managed according to store policy.</p> <p>1.5 Work-related incidents and accidents are reported to designated personnel.</p> <p>1.6 Consultative processes and procedures are made participatory for WHS.</p> |
| 2. Apply basic emergency procedures | <p>2.1 Fire and emergency procedures, including store evacuation are followed according to store policy and legislation.</p> <p>2.2 Designated personnel responsible for first aid and evacuation procedures are identified.</p> <p>2.3 Safety alarms are accurately identified.</p> |

| Variable | Range |
|-------------------|--|
| Safety procedures | May include: <ul style="list-style-type: none"> • Cash handling • Emergency, fire and accident procedures • Evacuation involving staff or customers • Handling dangerous goods |

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| | <ul style="list-style-type: none"> • Hazard identification • Issue resolution procedures • Manual handling • Personal safety procedures • Procedures for the use of personal protective clothing and equipment • Reporting incidents and accidents in the workplace • Store security • Stress management • Waste disposal |
| Unsafe work practices | <p>May include:</p> <ul style="list-style-type: none"> • Broken or damaged equipment • Damaged packing material or containers • Electricity and water • Glue guns • Inflammable materials and fire hazards • Ladders • Lifting practices • Sharp cutting tools and instruments • Spillages, waste and debris • Stress • Toxic substances • Trolleys |
| Checking | <p>May include:</p> <ul style="list-style-type: none"> • broken or damaged equipment • damaged packing material or containers • guarding of machinery • sharp cutting tools and instruments |
| Store policy and procedures | <p>May include:</p> <ul style="list-style-type: none"> • Basic safety procedures • Customers and staff • Dangerous goods • Emergency procedures • Equipment and tools • Federal, state or territory and local WHS legislation • Premises • Safe manual handling and lifting • Stock |
| Manual handling | <p>May include:</p> <ul style="list-style-type: none"> • Job procedures • Lifting or shifting practices, such as standard weights |

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| | <ul style="list-style-type: none"> • Use of equipment, such as ladders and trolleys |
| Designated personnel | <p>May include:</p> <ul style="list-style-type: none"> • Manager • Safety representative • Supervisor • Team leader |
| Consultative processes | <p>May include:</p> <ul style="list-style-type: none"> • Identification of health and safety representatives • Minutes from staff meetings and WHS meetings • Suggestions from staff for improving tasks and procedures |
| Emergency procedures | <p>May include:</p> <ul style="list-style-type: none"> • Accidents • Armed hold-ups • Fire • Sickness • Store evacuations • Storms and cyclones |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrate skills and knowledge competence to:</p> <ul style="list-style-type: none"> • apply safe work practices, in all areas of the store, according to WHS and codes of practice • apply appropriate store policies and procedures and legislative requirements in regard to following basic safety procedures and reports faults and problems to relevant person, department or committee • identify hazardous situations and rectifies where appropriate, or reports to the relevant personnel according to store policy and procedures • read, interpret and apply manufacturer instructions for using and storing hazardous goods • apply store policies and procedures with regard to emergency situations, evacuation, or accident and illness in the store |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Strategies for controlling risks through the hierarchy of control, including: <ul style="list-style-type: none"> ➢ Appropriate use of personal protective clothing ➢ Eliminating hazards ➢ Isolating hazards ➢ Using administrative controls ➢ Using engineering controls ➢ First aid procedures |

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| | <ul style="list-style-type: none"> • Identification of hazards in the workplace, including: <ul style="list-style-type: none"> ➢ Fire, chemical and electrical hazards ➢ Managing broken or faulty equipment ➢ Slip, trips and falls ➢ Spills and leakage of materials ➢ Storage of dangerous goods and hazardous substances ➢ Waste • Management of WHS, including: <ul style="list-style-type: none"> ➢ Communication and consultation processes ➢ Interpreting symbols for WHS signage ➢ Manual handling procedures ➢ Reporting procedures • Store policies and procedures in regard to: <ul style="list-style-type: none"> ➢ WHS emergency procedures ➢ Relevant industry codes of practice ➢ Rights and responsibilities of designated personnel responsible for health and safety in the workplace ➢ State and territory legislation and regulations |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Communication and interpersonal skills to: <ul style="list-style-type: none"> ➢ Report unsafe work practices, faulty plant and equipment and incidents and accidents through clear and direct communication ➢ Share information ➢ Use and interpret non-verbal communication • Literacy and numeracy skills to: <ul style="list-style-type: none"> ➢ Estimate weights, size, quantities and mixtures ➢ Interpret symbols used for WHS signage ➢ Read and interpret instructions • Technical skills to: <ul style="list-style-type: none"> ➢ Dispose of waste appropriately ➢ Handle broken or damaged equipment ➢ Identify hazardous goods and substances ➢ Locate and identify emergency exits and use safety alarms and fire extinguishers ➢ Store and use chemicals and hazardous substances • Use personal protective equipment, such as protective masks, gloves |
| Resource Implications | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |

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| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level II | |
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| Unit Title | Verify Non-automatic Digital Weighing Instruments |
| Unit Code | <u>TRD LMS2 02 0215</u> |
| Unit Descriptor | This unit of competence covers the knowledge, skills and attitudes needed to identify, inspect, verify and decision based on the legal aspect of non-automatic digital weighing instruments & all types of weighbridges under legal metrology control. It also involves the installation and/or simple repair of non-automatic digital weighing instruments and adjustment of all types of weighbridges. |

| Elements | Performance Criteria |
|---------------------------------------|---|
| 1. Plan and Prepare Tasks | 1.1 Measuring instruments to be verified are identified. 1.2 Appropriate equipment and standards are selected based on the standard requirement. 1.3 Supportive documents and reference standards are prepared and used. |
| 2. Perform adjustment (simple repair) | 2.1 Availability of all accessories and parts of the measuring instrument is checked. 2.2 The functionality of the non-automatic digital weighing instrument is checked. 2.3 Adjustment, and installation or simple repair are performed in accordance with legislation, organizational guidelines and Instrument manual if required. |
| 3. Pre-verification | 3.1 The standard weights and balances are cleaned if necessary. 3.2 Balances are put in a level position. 3.3 The instrument reading is adjusted to zero. 3.4 Data sheet is prepared for data collection. |
| 4. Perform verification | 4.1 The standard weights and the weights to be verified are handled and put gently according to the procedures. 4.2 Readings are collected as per the standard requirement. 4.3 Clean and in place the standard weights are put in its storage case. |

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| 5. Generate result and act | <p>5.1 Error calculation is performed by subtracting the instrument reading from the standard value.</p> <p>5.2 The maximum error calculated is taken.</p> <p>5.3 The calculated error is compared against the maximum permissible error.</p> <p>5.4 Conformance report is prepared and verification sticker or stamp put (in accordance with the legislation requirement and organizational procedures) if the result comply the standard requirement; otherwise an action is taken based on the law.</p> |
| 6. Maintain statutory/Legal records | <p>6.1 Test reports are used to present verification results in the required format</p> <p>6.2 Verification documentation is completes in accordance with legislative requirements and organizational procedures</p> <p>6.3 Accurate and complete records are kept in accordance with licensing requirements</p> |

| Variable | Range |
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| Measuring Instruments | Includes Non-automatic digital weighing instruments and all types of weighbridges(mechanical and digital) under legal metrology control |
| Equipment and Standards | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Standard weights • Tweezers • Toggles • Gloves • Brush |
| Supportive documents and reference standards | <p>May include the following but not limited to :</p> <ul style="list-style-type: none"> • Reference Standard Certificates of Verification • Test procedures for verifying measuring instruments • Organizational procedures e.g. company quality assurance manual • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures material data safety sheets • Equipment manuals and warranty, supplier catalogues and handbooks |
| Accessories and parts | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Supplement weights of balances |

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| | <ul style="list-style-type: none"> • Level indicator • Pan (load receptors) • Levers • Load cells • Display • Electrical and mechanical components |
| Non-automatic digital weighing instrument | <p>May include</p> <ul style="list-style-type: none"> • Digital balances small to medium scale measures • Mechanical weighbridges • Digital weighbridges |
| Maximum permissible errors | The Maximum allowable deviation of the instrument reading from the true value/standard readings/ |
| Verification | Includes periodic or subsequent verification. |
| Verification Sticker or stamp | A mark attached on verified instrument when it fulfills the standard requirement |

Evidence Guide

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| Critical Aspects of Competence | <p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> • Identify, access and apply test procedures • Identify and use suitable reference standards • Install and repair weighing instruments to meet statutory requirements • Carried out verification • Conduct error calculation, interpret and take actions • Report results in the required formats and expected timeframe |
| Underpinning Knowledge | <p>Demonstrate knowledge and understanding of:</p> <ul style="list-style-type: none"> • Design, major components and functions for non-automatic digital weighing instrument, and weighbridges (mechanical and digital) • Licensing requirements for a verifier including: <ul style="list-style-type: none"> ➢ Quality management system ➢ License conditions ➢ Maintenance of statutory records • General physical principles and concepts including weight, mass and gravity • Knowledge of the operating procedures across a range of environments including laboratories, retail, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs. • Knowledge of metrological terms and terminology specific to weighing instruments such as maximum permissible errors, |

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| | <p>traceability, uncertainty, maximum permissible difference, eccentricity, repeatability, error of measurement, error of indication and linearization.</p> <ul style="list-style-type: none"> • National measurement legislation applicable to non-automatic digital weighing instrument, and weighbridges (mechanical and digital) • Detailed knowledge of national test procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➤ Purpose of test ➤ Test conditions and possible environmental impacts on performance of the instrument ➤ Key preparation/measurement steps in test method ➤ Calculation steps to give results in appropriate units and precision ➤ Maximum permissible errors for non-automatic digital weighing instrument, and weighbridges (mechanical and digital) under verification • Procedures for completing verification documentation • Organisational policy and procedures for verifying non-automatic digital weighing instrument, and weighbridges (mechanical and digital) • Safety principles and procedures relevant to instruments and test environment <ul style="list-style-type: none"> ➤ basic first aid and site safety induction if required ➤ Types and uses of equipment and standards ➤ Safe handling procedures in using measuring instruments and standards • Application of four fundamental operation of mathematics • Practicing and applying legal metrology aspects based on law and standards |
| Underpinning Skills | <p>Demonstrate skills in:</p> <ul style="list-style-type: none"> • Diagnosing faults in non-automatic digital weighing instrument, and weighbridges (mechanical and digital) • Installing and simple repairing non-automatic digital weighing instrument, with a basic design • Accessing, interpreting and applying a range of documents for the verification of non-automatic digital weighing instrument, and weighbridges (mechanical and digital) including: <ul style="list-style-type: none"> ➤ National measurement legislation ➤ Routine national test procedures ➤ Certificates of approval ➤ National measurement institute verification policy |

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| | <ul style="list-style-type: none"> ➤ National and international design rules ➤ Pattern approval documents • Accessing and interpreting Certificates of Verification for a limited range of reference standards • Performing verifications over durations of up to one day in routine environments • Using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ Explain the purpose of verification ➤ Inform traders of non-compliances and consequences of failing to rectify them ➤ Explain verification procedures and outcomes to traders and managers • Accessing, transporting, setting up, validating, using and maintaining a limited range of test equipment and reference standards • Identifying and evaluating environmental impacts on performance of a range of weighing instruments • Conducting tests and recording results with close attention to detail and accuracy • Performing calculations involving: <ul style="list-style-type: none"> ➤ Fractions, decimals, ratios, proportions and percentages ➤ Scientific notation, correct units and the correct number of significant figures ➤ Interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation • Analysing performance results over a number of operating conditions • Planning routine tasks • Developing/implementing an efficient verification strategy that has a limited impact on traders, the public, employees and suppliers • Demonstrating professionalism and maintaining the rights of the trader at all times • Solving routine/expected problems • Working safely which may include applying basic first aid, confined space entry and working with heavy machinery • Communication skills |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |

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| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |
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| Occupational Standard: Legal Metrology Service Level II | |
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| Unit Title | Verify Safety Measuring Instruments |
| Unit Code | TRD LMS2 03 0215 |
| Unit Descriptor | This unit of competence covers the knowledge, skills and attitudes needed to identify, inspect, verify and decide based on the legal aspect of safety measuring instruments under legal metrology control. It also involves the installation and/or simple repair of safety measuring instruments. |

| Elements | Performance Criteria |
|---------------------------------------|---|
| 1. Plan and Prepare Tasks | <p>1.1 Safety measuring instruments to be verified are identified.</p> <p>1.2 Appropriate equipment and standards are selected based on the standard requirement.</p> <p>1.3 Supportive documents and reference standards are prepared and used.</p> |
| 2. Perform adjustment (simple repair) | <p>2.1 The functionality of the instrument is checked.</p> <p>2.2 Installation or simple repair is performed in accordance with legislation, organizational guidelines and instrument manual if required.</p> <p>2.3 The instrument reading is adjusted to zero.</p> |
| 3. Conduct Pre-verification | <p>3.1 Safety measuring instruments and standards are cleaned, if necessary.</p> <p>3.2 Whether the operating environment will impact on the performance of the simple measure is evaluated.</p> <p>3.3 The operating environment is modified or alternative arrangements are implemented to ensure reliable test conditions as necessary.</p> <p>3.4 Data sheet is prepared for data collection.</p> |
| 4. Perform verification | <p>4.1 Verification is performed in accordance with legislation requirement and organizational procedure.</p> <p>4.2 Readings are collected as per the standard requirement.</p> <p>4.3 The standards and instrument are put in place clean.</p> |

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| 5. Generate result and act | <p>5.1 Error calculation is performed by subtracting the instrument reading from the standard value.</p> <p>5.2 The maximum error calculated is taken.</p> <p>5.3 The maximum error is compared against the maximum permissible error.</p> <p>5.4 Conformance report is prepared and verification sticker or stamp put in accordance with legislation and standard requirements if the result comply the standard requirement; otherwise take an action based on the law.</p> |
| 6. Maintain statutory/Legal records | <p>6.1 Test reports are used to present verification results in the required format.</p> <p>6.2 Verification documentation is completed in accordance with legislative requirements and organizational procedures.</p> <p>6.3 Accurate and complete records are kept in accordance with licensing requirements.</p> |

| Variable | Range |
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| Safety Measuring Instruments | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Breath analyzer • Tyre pressure gauge • Sound level meters • Carbon-monoxide analyzer • Tachometer • Speed meter • Instruments for measurement of ionizing radiation and radioactivity |
| Equipment and Standards | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Standard measuring devices • Lifting and handling equipment |
| Supportive documents and reference standards | <p>May include the following but not limited to :</p> <ul style="list-style-type: none"> • Reference Standard Certificates of Verification • Test procedures for verifying measuring instruments • Organizational procedures e.g. company quality assurance manual • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures material data safety sheets • Equipment manuals and warranty, supplier catalogues and handbooks |

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| Verification | Covers periodic or subsequent verification |
| Maximum permissible error | The Maximum allowable deviation of the instrument reading from the true value/standard readings/ |
| Verification Sticker or stamp | A mark attached on verified instrument when it fulfills the standard requirement |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> • Identify access and apply test procedures. • Identify and use suitable reference standards. • Install and conduct simple repair safety measuring instrument to meet statutory requirements • Carried out verification • Conduct error calculation, interpret and take actions • Report results in the required formats and expected timeframe |
| Underpinning Knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Design, major components and functions for safety measuring instruments. • Licensing requirements for a verifier including: <ul style="list-style-type: none"> ➤ Quality management system ➤ License conditions ➤ Maintenance of statutory records • General application and science of physics. • Knowledge of the operating procedures across a range of environments including laboratories, retail, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs. • Knowledge of metrological terms and terminology specific to weighing instruments such as maximum permissible errors, traceability, uncertainty, maximum permissible difference, eccentricity, repeatability, error of measurement, error of indication and linearization. • National measurement legislation applicable to safety measuring instruments. • Detailed knowledge of national test procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➤ Purpose of test ➤ Test conditions and possible environmental impacts on performance of the instrument ➤ Key preparation/measurement steps in test method |

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| | <ul style="list-style-type: none"> ➤ Calculation steps to give results in appropriate units and precision ➤ Maximum permissible errors for safety measuring instruments under verification. • Procedures for completing verification documentation. • Organisational policy and procedures for verifying safety measuring instrument. • Safety principles and procedures relevant to instruments and test environment • Basic first aid and site safety induction if required • Types and uses of equipment and standards • Safe handling procedures in using measuring instruments and standards • Four fundamental operation of mathematics • Practicing and applying legal metrology aspects based on law and standards |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Diagnosing faults in safety measuring instruments. • Conducting simple installation and repair of safety measuring instruments with a basic design • Accessing, interpreting and applying a range of documents for the verification of weighing instruments including: <ul style="list-style-type: none"> ➤ National measurement legislation ➤ Routine national test procedures ➤ Certificates of approval ➤ National measurement institute verification policy ➤ National and international design rules ➤ Pattern approval documents • Accessing and interpreting Certificates of Verification for a limited range of reference standards • Performing verifications over durations of up to one day in routine environments • Using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ Explain the purpose of verification ➤ Inform traders of non-compliances and consequences of failing to rectify them ➤ Explain verification procedures and outcomes to traders and managers • Accessing, transporting, and setting up, validating, using and maintaining a limited range of test equipment and reference standards. • Identifying and evaluating environmental impacts on performance of a range of safety measuring instruments. |

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| | <ul style="list-style-type: none"> • Conducting tests and recording results with close attention to detail and accuracy • Performing calculations involving: <ul style="list-style-type: none"> ➤ Fractions, decimals, ratios, proportions and percentages. ➤ Scientific notation, correct units and the correct number of significant figures. ➤ Interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation. • Analysing performance results over a number of operating conditions • Planning routine tasks. • Developing/implementing an efficient verification strategy that has a limited impact on traders, the public, employees and suppliers. • Demonstrating professionalism and maintaining the rights of the trader at all times. • Solving routine/expected problems. • Working safely which may include applying basic first aid, confined space entry and working with heavy machinery. • Communication skills |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level II | |
|---|--|
| Unit Title | Verification of Liquid and Gas Flow Meter |
| Unit Code | <u>TRD LMS2 04 0215</u> |
| Unit Descriptor | This unit of competence covers the knowledge, skills and ability to apply National Test Procedures to determine whether a liquid measuring instrument using volume measures is suitable for trade and then mark it accordingly. It also involves the adjustment and/or simple repair of liquid and gas flow meter measuring instruments. |

| Elements | Performance Criteria |
|---------------------------------------|---|
| 1. Plan and prepare tasks | <p>1.1 The type of flow meter to be verified is identified and evaluated.</p> <p>1.2 Required working standards and equipment are selected.</p> <p>1.3 Supportive documents and relevant standards required for the verification are accessed and correctly interpreted.</p> <p>1.4 Plan is prepared with the customer to provide the items required on site</p> <p>1.5 Relevant local workplace health and safety issues are identified and appropriate control strategies implemented</p> |
| 2. Perform adjustment (simple repair) | <p>2.1 The functionality of the instrument is checked</p> <p>2.2 Installation or simple repair is performed in accordance with legislation, organizational guidelines and instrument manual if required.</p> <p>2.3 The instrument reading is adjusted to zero.</p> |
| 3. Conduct Pre-verification | <p>3.1 Measuring instruments and standards are cleaned, if necessary.</p> <p>3.2 Whether the operating environment will impact on the flow meter performance is evaluated.</p> <p>3.3 The operating environment is modified or alternative arrangements are implemented to ensure reliable test conditions as necessary.</p> <p>3.4 Data sheet is prepared for data collection.</p> |

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| 4. Perform verification | <p>4.1 Verification is performed in accordance with legislation requirement and organizational procedures.</p> <p>4.2 Readings are collected as per the standard requirement.</p> <p>4.3 The standards and instrument are put in clean place.</p> |
| 5. Generate result and act | <p>5.1 Error calculation is performed by subtracting the instrument reading from the standard value.</p> <p>5.2 The maximum error calculated is taken.</p> <p>5.3 The maximum error is compared against the maximum permissible error.</p> <p>5.4 Conformance report is prepared and verification sticker or stamp put in accordance with legislation and standard requirements if the result comply the standard requirement; otherwise take an action based on the law.</p> |
| 6. Maintain statutory/Legal records | <p>6.1 Test reports are used to present verification results in the required format.</p> <p>6.2 Verification documentation is completed in accordance with legislative requirements and organizational procedures.</p> <p>6.3 Accurate and complete records are kept in accordance with licensing requirements.</p> |

| Variable | Range |
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| Flow meter | <p>may include:</p> <ul style="list-style-type: none"> • LPG dispensers, • Milk flow meters, • Natural gas dispensers |
| Working standards | <p>may include:</p> <ul style="list-style-type: none"> • standard vessels different capacity starting to load maximum ,minimum and half range(500L,1500L,3000L) • verified flow meter • and verified flow meter |
| Operating environment | <p>may include:</p> <ul style="list-style-type: none"> • Vibration ,wind, heat, dust • electromagnetic interference • out of level |

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| Organizational procedures | <p>may include:</p> <ul style="list-style-type: none"> reference standards ,Certificates of Verification, Certificates of Approval for flow/gas meter, organizational test reports, organizational procedures and warranty, supplier catalogues and handbooks |
| Mark in accordingly | <p>may include:</p> <ul style="list-style-type: none"> Sticker, player plomp |
| Measuring tools | <p>may include:</p> <ul style="list-style-type: none"> ruler, thermometer, iron meter, equipment other than reference standards of measurement such as pumps, funnels and hoses, and water label |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> Selected proper measuring standards and equipment according to tasks Carried out verification Conduct error calculation, interpret and take actions Maintained and stores instruments |
| Underpinning Knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> knowledge of metrological terms and terminology specific flow/gas meter such as: <ul style="list-style-type: none"> ➤ maximum permissible errors, maximum permissible difference and uncertainty, error of measurement and error of indication ➤ meter creep ➤ hose prime ➤ maximum permissible variation ➤ traceability ➤ repeatability temperature correction general chemical and physical principles and concepts including: <ul style="list-style-type: none"> ➤ physical states (solid, liquid gas) ➤ weight, mass, gravity and density ➤ pressure, pressure differential, backpressure and head pressure ➤ fluid flow ➤ viscosity ➤ temperature effects and coefficients of expansion ➤ maximum ,minimum and half load of flow rate. |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> diagnosing faults in flow/gas meter accessing, interpreting and applying a range of documents for |

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| | <p>the verification of flow/gas meter:</p> <ul style="list-style-type: none"> ➤ national measurement legislation, ➤ intermediate legal Test Procedures, ➤ Ethiopia Standards , ➤ correction tables for volume, density and pressure, ➤ pattern approval documents. <ul style="list-style-type: none"> • performing calculations involving: <ul style="list-style-type: none"> ➤ fractions, ➤ decimals, ➤ ratios, ➤ proportions and percentages, ➤ evaluation of formulae, ➤ exponents, ➤ correct units and correct number of significant figures and ➤ calculation of uncertainties • planning complex tasks |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level II | |
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| Unit Title | Verify Volume Measuring Instruments |
| Unit Code | <u>TRD LMS2 05 0215</u> |
| Unit Descriptor | This unit of competence covers the ability to apply National Test Procedures to determine whether a liquid measuring instrument including large sized fixed tank using volume measures is suitable for trade and then mark it accordingly. It also involves the adjustment and/or simple repair of liquid measuring instruments. |

| Elements | Performance Criteria |
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| 1. Plan and Prepare Tasks | <p>1.1 Volume measuring instruments to be verified are identified.</p> <p>1.2 Appropriate equipment and standards are selected based on the standard requirement.</p> <p>1.3 Supportive documents and reference standards are prepared and used.</p> |
| 2. Perform adjustment | <p>2.1 Availability of all accessories and parts is checked and cleaned if necessary.</p> <p>2.2 Specified volume measuring instrument is ensured to fit for purpose in accordance with applicable legislation and organizational procedures</p> <p>2.3 Required components, tools and equipment are selected in accordance with manufacturer/component supplier specifications.</p> <p>2.4 Adjustment or simple repair is performed in accordance with legislation, organizational guidelines and Instrument manual (if required).</p> |
| 3. Conduct pre-verification | <p>3.1 Relevant local workplace health and safety issues are identified and appropriate control strategies implemented</p> <p>3.2 Whether the operating environment will impact on the instrument performance is evaluated.</p> <p>3.3 The operating environment is modified or alternative arrangements are implemented to ensure reliable test conditions as necessary.</p> <p>3.4 Data sheet is prepared for data collection.</p> |

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| 4. Perform verification | <p>4.1 The verification is conducted in accordance to the documented procedure and legislation requirement.</p> <p>4.2 Readings are collected as per the standard requirement.</p> <p>4.3 The standard and verified instrument is put in clean place.</p> |
| 5. Generate result and act | <p>5.1 Error calculation is performed by subtracting the instrument reading from the standard value.</p> <p>5.2 The maximum error calculated is taken.</p> <p>5.3 The maximum permissible errors for the instrument are identified from the legislative requirements.</p> <p>5.4 Maximum error is compared calculated against the maximum permissible error.</p> <p>5.5 Conformance report is prepared and verification sticker or stamp put if the result comply the standard requirement; otherwise an action is taken based on the law.</p> |
| 6. Maintain statutory/legal records | <p>6.1 Test reports are used to present verification results in the required format.</p> <p>6.2 Verification documentation is completed in accordance with legislative requirements and organizational procedures</p> <p>6.3 Accurate and complete records are kept in accordance with licensing requirements</p> |

| Variable | Range |
|------------------------------|---|
| Liquid measuring instruments | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Static tanks (over ground and underground tanks) • Draft barrels • Chemicals storage tank • Milk tanks • Oil can • Graduated volumetric devices |
| Equipment and standards | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Balance • Hydrometer • Thermometer • Provers • Liquid containing devices • Flow meters |
| Supportive | <p>May include the following but not limited to:</p> |

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| documents and reference standards | <ul style="list-style-type: none"> • Reference Standard Certificates of Verification and calibration. • Test procedures for verifying measuring instruments • Organizational procedures e.g. company quality assurance manual • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures material data safety sheets • Equipment manuals and warranty, supplier catalogues and handbooks |
| Maximum permissible errors | The Maximum allowable deviation of the instrument reading from the true value/standard readings/ |
| Verification | Covers periodic or subsequent verification |
| Verification sticker or stamp | A mark attached on verified instrument when it fulfills the standard requirement |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> • Selected proper measuring standards and equipment according to tasks • Carried out verification • Conduct error calculation, interpret and take actions • Maintain and stores instruments |
| Underpinning Knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Types and uses of equipment and standards • Safe handling procedures in using measuring instruments and standards. • Calculation and application of simple mathematics. • Practicing and applying legal metrology aspects based on law and standards. |
| Underpinning Skills | <p>Demonstrate skills of the following of:</p> <ul style="list-style-type: none"> • Reading skills required to interpret work instruction • Communication skills • Installing and repairing liquid measuring instruments with a basic design • Accessing, interpreting and applying a range of documents for the verification of liquid measuring instruments including: <ul style="list-style-type: none"> ➤ National measurement legislation ➤ Intermediate National Test Procedures ➤ Certificates of Approval ➤ National Measurement inspection policy |

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| | <ul style="list-style-type: none"> ➤ Ethiopian Standards ➤ Industry codes of practice ➤ Correction tables for volume, density and pressure for a range of liquids ➤ National and international design rules ➤ Pattern approval documents • Performing verification tests over extended durations in non-routine and hazardous environments • Accessing and interpreting certificates of verification for a range of reference standards • Using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ Explain purpose of the verification ➤ Inform traders of non-compliances and consequences of failing to rectify ➤ Access external equipment and resources to complete the verification ➤ Explain verification procedures and outcomes to traders and managers • Accessing, transporting, setting up, validating, using and maintaining a broad range of test equipment and reference standards • Identifying and evaluating environmental factors that may impact on performance of liquid measuring instruments • Organizing large equipment to be dispatched ahead of verification visit • Conducting tests and recording results with close attention to detail and accuracy • Performing calculations involving: <ul style="list-style-type: none"> ➤ Fractions, decimals, ratios, proportions and percentages. ➤ Evaluation of formulae containing powers, exponents and logarithms functions. ➤ Use of scientific notation, correct units and correct number of significant figures. ➤ Preparation and interpretation of linear, semi-log and log-log graphs. ➤ Interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation. ➤ Determination of regression line equations and correlation coefficients. ➤ Preparation and interpretation of more complex control charts and frequency distribution plots. |
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| | <ul style="list-style-type: none"> • Handling measuring instruments • Performing mathematical calculations using the four fundamental operations |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the onsite or in-house work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level II | |
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| Unit Title | Apply Workplace Hygiene Procedures |
| Unit Code | TRD LMS2 06 0215 |
| Unit Descriptor | This unit describes the performance outcomes, skills and knowledge required to apply good hygiene practices within a range of service industry operations. It requires the ability to follow predetermined procedures, identify and control simple hazards and take particular hygiene measures to ensure the non-contamination of food and other items that might put customers, colleagues and self at a health risk. |

| Elements | Performance Criteria |
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| 1. Follow hygiene procedures and identify hygiene hazards. | <p>1.1 Hygiene procedures and policies are accessed and followed correctly and consistently according to organization and legal requirements to ensure health and safety of customers and colleagues.</p> <p>1.2 Poor organization practices that are inconsistent with hygiene procedures are identified and reported.</p> <p>1.3 Hygiene hazards that may affect the health and safety of customers, colleagues and self are identified.</p> <p>1.4 Action is taken to remove or minimize the hazards within scope of individual responsibility and according to organization and legal requirements.</p> <p>1.5 Hygiene hazards are promptly reported to appropriate person for following up where control of hazard is beyond the scope of individual responsibility.</p> |
| 2. Report any personal health issues | <p>2.1 Any personal health issues that are likely to cause a hygiene risk are reported.</p> <p>2.2 Incidents of food contamination that have resulted from the personal health issue are reported.</p> <p>2.3 Food handling activities in where there is a risk of food contamination are made participatory as a result of the health issue.</p> |
| 3. Prevent food and other item contamination | <p>3.1 Clean clothes, wear required personal protective clothing and only use organization-approved bandages and dressings are maintained to prevent contamination to food</p> <p>3.2 Clothing or other items worn are ensured not to contaminate food.</p> <p>3.3 Unnecessary direct contact is prevented with ready to eat food.</p> <p>3.4 Food is not followed with any body fluids or tobacco product to become contaminated from sneezing, coughing, blowing nose, spitting, smoking or eating over food or food preparation surfaces.</p> |

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| | 3.5 The use of clean materials and clothes and safe and hygienic practices are maintained to ensure that no <i>cross-contamination of other items in the workplace occurs.</i> |
| 4. Prevent cross-contamination by washing hands. | 4.1 <i>Hands are washed at appropriate times</i> and hand washing procedures are followed correctly and consistently according to organization and legal requirements. 4.2 Hands are washed using <i>appropriate facilities.</i> |

| Variable | Range |
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| Hygiene procedures | May include: <ul style="list-style-type: none"> • personal hygiene • safe and hygienic handling of food and beverages • regular hand washing • correct food storage • suitable dress and personal protective equipment and clothing • avoidance of cross-contamination • hygienic cleaning practices to avoid cross-contamination • use of cleaning equipment, clothes and materials to avoid cross-contamination • safe handling and disposal of linen and laundry • appropriate handling and disposal of garbage • cleaning and sanitising • procedures documented in the organisation food safety program • procedures covered by staff training programs • procedures required by the food safety rule |
| Poor organisation practices | May include: <ul style="list-style-type: none"> • poor personal hygiene practices • poor food handling practices that may result in the contamination of food • poor cleaning practices that may result in cross-contamination of food and other items • practices inconsistent with the organisation's food safety program • outdated practices not in keeping with current organisation activities |
| Hygiene hazards | May include: <ul style="list-style-type: none"> • contaminated food • vermin • airborne dust • items such as linen, tea towels and towels that may be contaminated with human waste, such as blood and body secretions • dirty equipment and utensils • contaminated garbage • use of practices not in keeping with current organisation activities • colleagues without appropriate training or understanding of |

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| | <p>good hygiene practices, policies and procedures</p> <ul style="list-style-type: none"> • equipment not working correctly, such as fridge and temperature probes |
| Health issues | <p>May include:</p> <ul style="list-style-type: none"> • food-borne diseases • airborne diseases • infectious diseases |
| Other items worn | <p>May include:</p> <ul style="list-style-type: none"> • hair accessories • jewellery • watches • bandages |
| Cross-contamination of other items in the workplace | <p>May include:</p> <ul style="list-style-type: none"> • infected linen • items such as linen, tea towels and towels that may be contaminated with human waste, such as blood and body secretions • dirty equipment and utensils • spreading bacteria from bathroom or bedroom areas to kitchen areas in an accommodation facility |
| Washing hands at appropriate times | <p>May include:</p> <ul style="list-style-type: none"> • immediately before working with food • immediately after handling raw food • before commencing or recommencing work with food • immediately after using the toilet • Immediately after smoking, coughing, sneezing, blowing the nose, eating, drinking, and touching the hair, scalp or any wound |
| Appropriate facilities | <p>May include:</p> <ul style="list-style-type: none"> • warm running water • soap • single use towels • Designated hand washing sink |

Evidence Guide

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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • ability to access and interpret hygiene procedures and consistently apply these during day-to-day activities • understanding of the importance of following hygiene procedures and of the potential implications of disregarding those procedures • project or work activities that show the candidate's ability to apply good hygiene practices on multiple occasions in a range of different operational circumstances to ensure consistency in the application of hygiene procedures |
| Underpinning Knowledge and Attitudes | <p>Demonstrates knowledge in:</p> <ul style="list-style-type: none"> • very basic understanding of federal, and state or territory food safety legislative compliance requirements, contents of national rules and standards that underpin regulatory requirements, and |

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| | <p>local government food safety regulations</p> <ul style="list-style-type: none"> • working knowledge of organisation personal hygiene policies and procedures • ramifications of failure to observe hygiene policies and procedures • broad understanding of the general hazards in handling food, linen, laundry and garbage, including major causes of contamination and cross-infection • sources and effects of microbiological contamination of food and other items that would require protection in the industry sector and business • basic understanding of the choice and application of cleaning and sanitising equipment and materials |
| Underpinning Skills | <p>Demonstrates skills of:</p> <ul style="list-style-type: none"> • communication skills to verbally report hygiene hazards and poor organisation practice • literacy skills to read and interpret relevant organisation policies, procedures and diagrams that identify good hygiene practices |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Assessment Methods | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation/ Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level II | |
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| Unit Title | Operate and Maintain Equipment |
| Unit Code | <u>TRD LMS2 07 0215</u> |
| Unit Descriptor | <p>This unit covers the operation and maintenance of small units of equipment.</p> <p>This unit supports the attainment of skills and knowledge required for competent workplace performance in of organizations sizes. Knowledge of the legislation and regulations within which organizations must operate is essential.</p> |

| Elements | Performance Criteria |
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| 1. Operate equipment | <p>1.1. Equipment is operated in accordance with manufacturers' specifications, organization procedures and statutory requirements.</p> <p>1.2. Operational problems with equipment are identified and reported to the appropriate person.</p> <p>1.3. Equipment is operated in accordance with Occupational Health and Safety (OHS) legislation and guidelines.</p> |
| 2. Monitor and maintain equipment | <p>2.1. Equipment is inspected regularly in accordance with manufacturers' specifications and organization standards.</p> <p>2.2. Equipment is maintained and reports are made in accordance with organization procedures and manufacturers' specifications.</p> <p>2.3. Equipment is serviced regularly and repairs are arranged in accordance with organization procedures and manufacturers' specifications.</p> |
| 3. Maintain records | <p>3.1. Information is recorded in accordance with organization legislative requirements.</p> <p>3.2. Records are made clear and accurate and kept up to date in accordance with organization procedures.</p> <p>3.3. Records are secured and made accessible in accordance with organization requirements.</p> |

| Variable | Range |
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| Equipment indoor | <p>may include:</p> <ul style="list-style-type: none"> • photocopiers • computers • fax machines. |
| Equipment outdoor | <p>may include:</p> <ul style="list-style-type: none"> • chainsaws • electric tools • small motorised tools and equipment. |
| Data required | may include: |

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| | <ul style="list-style-type: none"> • manufacturers' specifications • records of operations • defect reports. |
| Maintenance activities | <p>may include:</p> <ul style="list-style-type: none"> • basic cleaning • replacement of consumable items such as oil, spark plugs and belts. |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences of:</p> <ul style="list-style-type: none"> • Relevant organizational policies, procedures and documentation, including logbooks and equipment maintenance records. • Following Manufacturers' specifications. • Operating Equipment is d in accordance with manufacturers' procedures and handbooks. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • interpretation of manuals • OHS requirements • types of plant and equipment. |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • plant and equipment operation, maintenance and servicing procedures • written and verbal communication skills. |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level II | |
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| Unit Title | Participate in Environmentally Sustainable Work Practices |
| Unit Code | TRD LMS2 08 0215 |
| Unit Descriptor | <p>This competence covers the outcomes required to effectively measure current resource use and carry out improvements including those reducing negative environmental impacts of work practices.</p> <p>This competence applies to operators/team members who are required to follow procedures so as to work in an environmentally sustainable manner. This ensures regulatory compliance and also aims at minimising environmental risks and maximises the environmental performance of the process and the organisation. It includes:</p> <ul style="list-style-type: none"> • Resources used • Potential environmental hazards • Improving environmental performance <p>It may be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an organisation and across different industry sectors.</p> |

| Elements | Performance Criteria |
|---|---|
| 1. Identify current resource use and environmental issues. | <p>1.1. Workplace environmental and resource efficiency issues are identified.</p> <p>1.2. Resources used in own work role are identified.</p> <p>1.3. Current usage of resources is measured and recorded using appropriate techniques.</p> <p>1.4. Workplace environmental hazards are identified and reported to appropriate personnel.</p> |
| 2. Comply with environmental regulations. | <p>2.1. Procedures are followed to ensure compliance.</p> <p>2.2. Environmental incidents are reported to appropriate personnel.</p> |
| 3. Seek opportunities to improve environmental practices and resource efficiency. | <p>3.1. Enterprise plans are followed to improve environmental practices and resource efficiency.</p> <p>3.2. Suggestions for improvements are made to workplace practices in own work area.</p> |

| Variable | Range |
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| Environmental and resource efficiency issues | include minimisation of environmental risks and maximisation of opportunities to improve business environmental performance and to promote more efficient production and consumption of |

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| | <p>natural resources, for example by:</p> <ul style="list-style-type: none"> • minimisation of waste, through implementation of the waste management hierarchy • efficient and effective use of energy and other resources • seeking alternative sources of energy • efficient use of materials and appropriate disposal of waste • use of controls to minimise the risk of environmental damage from hazardous substances • efficient water use • reducing emissions • life cycle analysis applied to issues such as energy supply, materials, transport, production |
| Measuring | <p>should be interpreted in a manner consistent with the scope of the job and may include things like:</p> <ul style="list-style-type: none"> • counting the number of items entering/leaving a work area • reading indicators in the work area • obtaining relevant information from support personnel • other simple means |
| Appropriate techniques | <p>include:</p> <ul style="list-style-type: none"> • material fed to/consumed by plant/equipment • plant meters and gauges • job cards including kanbans • examination of invoices from suppliers • measurements made under different conditions • examination of relevant information and data. |
| Procedures | <p>All operations are performed in accordance with procedures including all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.</p> |
| Compliance | <p>includes meeting relevant federal, state and local government laws, by-laws, regulations and mandated codes of practice. It also includes any codes and standards that the enterprise applies voluntarily.</p> |
| Incidents | <p>include:</p> <ul style="list-style-type: none"> • breaches or potential breaches of regulations • occurrences outside of standard procedure which may lead to lower environmental performance. |
| Enterprise plans | <p>include:</p> <ul style="list-style-type: none"> • documented policies and procedures • work plans to minimise waste, increase efficiency of water/energy use, minimise environmental hazards |
| Suggestions | <p>include ideas that help to:</p> <ul style="list-style-type: none"> • prevent and minimise environmental risks and maximise opportunities • reduce emissions of greenhouse gases • reduce use of non-renewable resources • improve energy efficiency • increase use of renewable, recyclable, reusable and recoverable resources • reduce waste |

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| | <ul style="list-style-type: none"> • increasing the reusability/recyclability of wastes/products • reduce water usage and/or water wastage. |
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| Evidence Guide | |
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| Critical Aspects of Competence | Demonstrates skills and knowledge competences to: <ul style="list-style-type: none"> • identify and measure resources used in their job • identify situations likely to lead to an environmental incident • follow procedures related to environmental performance. • work is routinely to procedures • the minimum of resources is used consistent with the job requirements, good practice and the procedures. |
| Underpinning Knowledge and attitudes | Demonstrate knowledge of: <ul style="list-style-type: none"> • basic understanding of sustainability • the environmental hazards/risks, resource use and inefficiencies associated with own workplace (at an appropriate level) • the relevant environmental and resource efficiency systems and procedures for own work area • the impact of laws and regulations to a level relevant to the work context |
| Underpinning Skills | Demonstrate skills of: <ul style="list-style-type: none"> • report as required by procedures • follow procedures and instructions and respond to change • ask questions and seek clarifications relating to work requirements • Reading and writing is required in order to interpret required procedures and complete required workplace forms/reports. • Numeracy is required to interpret numeric workplace information, readings and measurements, handle data as required and complete numeric components of workplace forms/reports. |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level II | |
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| Unit Title | Carry out Inspections and Monitoring under Guidance |
| Unit Code | TRD LMS2 09 0215 |
| Unit Descriptor | <p>This unit covers the requirements to carry out inspections and monitoring activities in accordance with relevant legislation and regulations, working under guidance. It includes confirming and preparing for inspections and monitoring activities, carrying out inspections and monitoring activities, acting on routine non-compliance and providing reports.</p> <p>In practice, carrying out inspections and monitoring under guidance may overlap with other public sector work activities such as handling workplace information, communicating, using technology, working in a public sector environment, working safely, etc.</p> |

| Elements | Performance Criteria |
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| 1. Confirm and prepare for inspections and monitoring activities | <p>1.1 Tasks are clarified and confirmed with other staff members in accordance with organisational requirements.</p> <p>1.2 Procedures, timeframes, resources and equipment requirements are confirmed in accordance with organisational and task requirements.</p> <p>1.3 Legislative requirements, risk management practices and occupational health and safety requirements are confirmed with senior staff.</p> <p>1.4 Communication strategies and development opportunities to make clients aware of their obligations under relevant legislation are identified with assistance from other staff members.</p> <p>1.5 Resources/equipment are obtained and prepared in accordance with organisational and task requirements.</p> |
| 2. Carry out inspections and monitoring activities | <p>2.1 Inspections and monitoring activities are carried out under guidance in accordance with organisational and legislative requirements, including occupational health and safety.</p> <p>2.2 Risk management strategies are implemented as required in accordance with set procedures and timelines.</p> <p>2.3 Resources/equipment are used and maintained in accordance with organisational and task requirements.</p> |
| 3. Act on routine non-compliance | <p>3.1 Information/education is provided to achieve client compliance in accordance with organisational guidelines and legislative requirements relating to the seriousness of the possible breach.</p> <p>3.2 Further action as a result of failure to achieve compliance is taken in accordance with organisational guidelines and legislative requirements relating to the seriousness of the possible breach.</p> <p>3.3 Guidance is obtained to interpret legislation/regulations, and contraventions accompanied by recommended action are</p> |

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| | <p>reported in accordance with organisational policy and procedures.</p> <p>3.4 Serious or complex situations are referred for advice or resolution in accordance with organisational policy and procedures.</p> <p>3.5 Assistance is obtained to determine the elements of offences to be prosecuted under relevant legislation, and information/evidence is collected and provided in accordance with legislation, procedures and rules of evidence.</p> <p>3.6 When required, court attendance and conduct requirements are fulfilled in compliance with organisational guidelines.</p> |
| 4. Provide reports | <p>4.1 Records are maintained in accordance with organisational requirements.</p> <p>4.2 Reports are provided in a timely manner and meet organisational requirements for format and content.</p> |

| Variable | Range |
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| Tasks | <p>may include:</p> <ul style="list-style-type: none"> • inspections/examinations • monitoring • surveillance • basic audit activities • other compliance assurance activities |
| Other staff members | <p>may include:</p> <ul style="list-style-type: none"> • supervisors • senior policy officers • senior inspectors • line managers • project managers • program managers • inspection specialists |
| Procedures | <p>may include:</p> <ul style="list-style-type: none"> • observation procedures • recording, such as surveillance forms, databases • handling procedures • sampling procedures • rejection procedures • storage procedures • disinfection procedures • treatment procedures • work instructions • organisational guidelines and code of conduct • incident reporting procedures • safety procedures • emergency procedures |

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| | <ul style="list-style-type: none"> • evacuation procedures |
| Legislation | <p>may include:</p> <ul style="list-style-type: none"> • proclamations and regulations • Crimes Act and Criminal Code • Customs Act and regulations • Wildlife Protection Act • Export Control Act • Imported Foods Act • Occupational Health and Safety Act • Government legislation and regulations, such as those relating to: <ul style="list-style-type: none"> ➢ agriculture ➢ horticulture ➢ conservation and land management ➢ fisheries ➢ environmental protection ➢ building ➢ water ➢ emergencies • international legislation/codes of behaviour |
| Resources and equipment | <p>may include:</p> <ul style="list-style-type: none"> • inspection equipment • maps, plans • satellite imagery • aerial photographs • survey plans • spatial data and information • cameras • personal protective equipment - respirators, gloves, overalls, boots, hearing protection, goggles, masks etc • test kit equipment • recording equipment • measuring equipment • storage equipment/facilities • entry authority/warrant • Global Positioning System (GPS) equipment • compass • communication equipment • computers • vehicles - 2 or 4 wheel drive |
| Inspections and monitoring | <p>may relate to:</p> <ul style="list-style-type: none"> • aircraft • airfreight • animal products • animals • cargo • cereals • collection of biological specimens • disposal of organic waste |

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| | <ul style="list-style-type: none"> • fresh produce • goods • land condition, such as: <ul style="list-style-type: none"> ➤ topography ➤ salinity ➤ erosion ➤ weed infestation ➤ vermin infestation ➤ fire hazard ➤ over grazing • land improvements, such as: <ul style="list-style-type: none"> ➤ fences ➤ buildings ➤ sporting or playground equipment ➤ irrigation infrastructure ➤ sewerage infrastructure ➤ waterfront occupations ➤ community structures ➤ land usage • leases and other tenures, to ensure compliance with conditions • licence/permit compliance (e.g. vegetation clearing) • live fish • livestock • mail • mineral samples • passenger baggage • people • pests • plant products • plants • premises • properties • reserves and their use/s • survey activities to maintain readiness for district emergency plans • vector monitoring • vessels |
| Risk management strategies | <p>may include:</p> <ul style="list-style-type: none"> • monitoring • treatment • containment • control • eradication • destruction • biosecurity strategies |
| Action | <p>may include:</p> <ul style="list-style-type: none"> • advice • warning • formal notification of intent |

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| | <ul style="list-style-type: none"> • infringement notices • on-the-spot fines • court prosecution |
| Collecting of evidence | <p>may include:</p> <ul style="list-style-type: none"> • Observation • interviewing • seizure • sampling • specimen collection • recording • photographing • diagrammatic evidence • notes • maintenance of case files • determination of land ownership |
| Records | <p>may include:</p> <ul style="list-style-type: none"> • notes • case files • statistics • forms (application forms, disease notification forms, etc) • notices (seizure notice, infringement notice, etc) • invoices • receipts • commercial documentation such as bills of lading, airway bills |
| Routine non-compliance | <p>will only include:</p> <ul style="list-style-type: none"> • straightforward matters where action is prescribed and other more serious or complex matters are referred to senior staff |

Evidence Guide

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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competence to:</p> <ul style="list-style-type: none"> • confirm and prepare for inspections and monitoring activities • carry out inspections and monitoring activities • act on routine non-compliance • provide reports |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • enabling legislation and other public sector legislation including occupational health and safety, environment, privacy • organisational policy and procedures • inspection/examination procedures • monitoring procedures • elements of an offence • responses to routine non-compliance • risk management practices • equity and diversity principles • workplace and industry environment |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • undertaking observation and analysis • communicating with a diverse range of clients and staff |

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| | <ul style="list-style-type: none"> • responding to diversity, including gender and disability • writing reports using standard formats • using computers for word processing and recording of statistical data • operating workplace equipment • applying public sector legislation such as occupational health and safety and environment in the context of inspection and monitoring |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level II | |
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| Unit Title | Produce Simple Word Processed Documents |
| Unit Code | TRD LMS2 10 0215 |
| Unit Descriptor | This unit describes the performance outcomes, skills and knowledge required to correctly operate word processing applications in the production of workplace documents. And this unit applies to individuals who perform a range of practical skills and fundamental knowledge of word processing and software in a defined context, under direct supervision or with limited individual responsibility. |

| Elements | Performance Criteria |
|---------------------------------|---|
| 1. Prepare to produce documents | <p>1.1. Safe work practices are used to ensure ergonomic, work organization, energy and resource conservation requirements addressed.</p> <p>1.2. Document purpose, audience and presentation requirements are identified and clarified with relevant personnel as required.</p> <p>1.3. Organizational and task requirements are identified for document layout and design.</p> |
| 2. Produce documents | <p>2.1. Document is formatted using appropriate software functions to adjust page layout to meet information requirements, in accordance with organizational style and presentation requirements.</p> <p>2.2. System features are used to identify and manipulate screen display options and controls.</p> <p>2.3. Manuals, user documentation and online help are used to overcome problems with document presentation and production.</p> |
| 3. Finalise documents | <p>3.1. Ensure final document is previewed, checked, adjusted and printed in accordance with organizational and task requirements.</p> <p>3.2. Ensure document is prepared within designated time lines and organizational requirements.</p> <p>3.3. Document is named and stored in accordance with organizational requirements and exit application without information loss/damage.</p> |

| Variable | Range |
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| Requirements | may include: <ul style="list-style-type: none"> • avoiding radiation from computer screens • chair height, seat and back adjustment • document holder • footrest • keyboard and mouse position • lighting • noise minimisation • posture • screen position • workstation height and layout • exercise breaks • mix of repetitive and other activities • rest periods • disposing of non-confidential waste paper in recycling bins • double-sided paper use • re-using paper for rough drafts (observing confidentiality requirements) • utilising power-save options for equipment |
| Document | may include: <ul style="list-style-type: none"> • agendas • briefing papers • envelopes • faxes • labels • letters • mail merges • memos • minutes • short reports • simple one-page flyers • standard form letters |

| Evidence Guide | |
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| Critical Aspects of Competence | Demonstrates skills and knowledge competences <ul style="list-style-type: none"> • knowledge of simple word processing functions, standard document layout and design principles • production of a minimum of three simple, word processed documents |
| Underpinning Knowledge and attitudes | Demonstrate knowledge of: <ul style="list-style-type: none"> • formatting styles and their effect on formatting, readability and appearance of documents • purpose, use and function of word processing software • organisational requirements for ergonomics, work periods and breaks, and conservation techniques • organisational style guide. |
| Underpinning Skills | Demonstrate skills of: <ul style="list-style-type: none"> • communication skills to clarify document requirements |

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| | <ul style="list-style-type: none"> • editing and proofreading skills to check own work for accuracy • keyboarding skills to enter text and numerical data • literacy skills to read and understand organisation's procedures, and to use basic models to produce a range of correspondence • problem-solving skills to solve routine problems. |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level II | |
|---|---|
| Unit Title | Create and Use Spreadsheets |
| Unit Code | TRD LMS2 11 0215 |
| Unit Descriptor | <p>This unit covers skills and knowledge required to correctly create and use spreadsheets and charts through the use of spreadsheet software.</p> <p>This unit applies to individuals who perform a range of routine tasks in the workplace using a limited range of practical skills and fundamental knowledge of creating spreadsheets in a defined context under direct supervision or with limited individual responsibility</p> |

| Elements | Performance criteria |
|---------------------------------|--|
| 1. Select and prepare resources | <p>1.1 Workspace, furniture and equipment are adjusted to suit user ergonomic, work organization and Occupational Health and Safety (OHS) requirements.</p> <p>1.2 Energy and resource conservation techniques are used to minimize wastage in accordance with organizational and statutory requirements</p> <p>1.3 Spreadsheet task requirements are identified and clarified with relevant personnel as required</p> |
| 2. Create simple spreadsheets | <p>2.1 Ensure data is entered, checked and amended in accordance with organizational and task requirements, to maintain consistency of design and layout</p> <p>2.2 Spreadsheet is formatted using software functions, to adjust page and cell layout to meet information requirements, in accordance with organizational style and presentation requirements</p> <p>2.3 Ensure formulae are used and tested to confirm output meets task requirements, in consultation with appropriate personnel as required</p> <p>2.4 Manuals, user documentation and online help are used to overcome problems with spreadsheet design and production.</p> |
| 3. Produce simple charts | <p>3.1 Chart type and design that enables valid representation of numerical data and meets organizational and task requirements are selected.</p> <p>3.2 Chart is created using appropriate data range in the spreadsheet.</p> <p>3.3 Chart type and layout are modified using formatting features.</p> |

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| 4. Finalize spreadsheets | <p>4.1 Ensure spreadsheet and any accompanying charts are previewed, adjusted and printed in accordance with organizational and task requirements</p> <p>4.2 Data input is ensured to meet designated time lines and organizational requirements for speed and accuracy</p> <p>4.3 Spreadsheet is named and stored in accordance with organizational requirements and exit the application without data loss/damage.</p> |
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| Variable | Range |
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| Requirements | <p>may include:</p> <ul style="list-style-type: none"> • avoiding radiation from computer screens • chair height, seat and back adjustment • document holder • footrest • keyboard and mouse position • lighting • noise minimisation • posture • screen position • workstation height and layout • exercise breaks • mix of repetitive and other activities • rest periods |
| Conservation techniques | <p>may include:</p> <ul style="list-style-type: none"> • double-sided paper use • recycling used and shredded paper • re-using paper for rough drafts (observing confidentiality requirements) • utilising power-save options for equipment |
| Spreadsheet task requirements | <p>may include:</p> <ul style="list-style-type: none"> • data entry • output • presentation • storage |
| Data | <p>may include:</p> <ul style="list-style-type: none"> • numbers • text |
| Checking | <p>may include:</p> <ul style="list-style-type: none"> • accuracy of data • accuracy of formulae with calculator • ensuring instructions with regard to content and format have been followed • proofreading • spelling, electronically and manually |
| Formatting | <p>may include:</p> |

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| | <ul style="list-style-type: none"> • alignment on page • efficiency of formulae • enhancements to format - borders, patterns and colours • enhancements to text • headers/footers • use of absolute and relative cell addresses • use of cell addresses in formulae |
| Software functions | <p>may include:</p> <ul style="list-style-type: none"> • adding/deleting columns/rows • formatting cells • formatting text • headers/footers • sizing columns/rows |
| Formulae | <p>may include:</p> <ul style="list-style-type: none"> • absolute cell referencing and/or mixed references • average • division • maximum • minimum • multiplication • subtraction • sum • combinations of above |
| Chart types | <p>may include:</p> <ul style="list-style-type: none"> • area • bar • column • exploded pie • line • pie and 3-D pie • scatter/bubble • stacked/multiple bar • stacked, 3-D column |
| Features | <p>may include:</p> <ul style="list-style-type: none"> • axes • axis title • borders • chart title • colours • data labels • data tables • fills • gridlines • legend • lines • patterns |
| Printing | <p>may include:</p> <ul style="list-style-type: none"> • fit on one page • fit specific number of pages |

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| | <ul style="list-style-type: none"> • with formulae • with values |
| Designated time lines | <p>may include:</p> <ul style="list-style-type: none"> • organisational time line e.g. financial requirements • time line agreed with internal/external client • time line agreed with supervisor/person requiring spreadsheet |
| Storing data | <p>may include:</p> <ul style="list-style-type: none"> • authorised access • filing locations • organisational policy for backing up files • organisational policy for filing hard copies of spreadsheets • security • storage in electronic folders/sub-folders • storage on CD-ROM, zip drives, USB memory |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences</p> <ul style="list-style-type: none"> • designing a minimum of two spreadsheets • using cell-based formulae • creating charts using relevant data • knowledge of purpose and range of use of spreadsheet functions. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • formatting of workplace documents • organisational requirements for ergonomic standards, work periods and breaks, and conservation techniques • organisational guidelines on spreadsheet manipulation and processing • purpose and range of use of spreadsheet functions. |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • communication skills to clarify requirements of spreadsheet • editing and proofreading skills to check own work for accuracy • keyboarding skills to enter text and numerical data • literacy skills to read and understand organisation's procedures, and to use basic models to produce a range of spreadsheets • numeracy skills to create and use spreadsheet formulae. |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level II | |
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| Unit Title | Participate in Workplace Communication |
| Unit Code | TRD LMS2 12 0215 |
| Unit Descriptor | This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements. |

| Elements | Performance Criteria |
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| 1. Obtain and convey workplace information | <p>1.1 Specific and relevant information is accessed from appropriate sources.</p> <p>1.2 Effective questioning, active listening and speaking skills are used to gather and convey information.</p> <p>1.3 Appropriate medium is used to transfer information and ideas.</p> <p>1.4 Appropriate non- verbal communication is used.</p> <p>1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed.</p> <p>1.6 Defined workplace procedures for the location and storage of information are used.</p> <p>1.7 Personal interaction is carried out clearly and concisely.</p> |
| 2. Participate in workplace meetings and discussions | <p>2.1 Team meetings are attended on time.</p> <p>2.2 Own opinions are clearly expressed and those of others are listened to without interruption.</p> <p>2.3 Meeting inputs are made consistent with the meeting purpose and protocols established.</p> <p>2.4 Workplace interactions are conducted in a courteous manner.</p> <p>2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded.</p> <p>2.6 Meetings outcomes are interpreted and implemented.</p> |
| 3. Complete relevant work related documents | <p>3.1 Range of forms relating to conditions of employment is completed accurately and legibly.</p> <p>3.2 Workplace data is recorded on standard workplace forms and documents.</p> <p>3.3 Basic mathematical processes are used for routine calculations.</p> <p>3.4 Errors in recording information on forms/ documents are identified and properly acted upon.</p> <p>3.5 Reporting requirements to supervisor are completed according to organizational guidelines.</p> |

| Variable | Range |
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| Appropriate sources | May include but not limited to: <ul style="list-style-type: none"> • Team members • Suppliers • Trade personnel • Local government • Industry bodies |
| Medium | May include but not limited to: <ul style="list-style-type: none"> • Memorandum • Circular • Notice • Information discussion • Follow-up or verbal instructions • Face to face communication |
| Storage | May include but not limited to: <ul style="list-style-type: none"> • Manual filing system • Computer-based filing system |
| Protocols | May include but not limited to: <ul style="list-style-type: none"> • Observing meeting • Compliance with meeting decisions • Obeying meeting instructions |
| Workplace interactions | May include but not limited to: <ul style="list-style-type: none"> • Face to face • Telephone • Electronic and two way radio • Written including electronic, memos, instruction and forms, non-verbal including gestures, signals, signs and diagrams |
| Forms | May include but not limited to: <ul style="list-style-type: none"> • Personnel forms, telephone message forms, safety reports |

| Evidence Guide | |
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| Critical Aspects of Competency | Demonstrates skills and knowledge to: <ul style="list-style-type: none"> • Prepare written communication following standard format of the organization • Access information using communication equipment • Make use of relevant terms as an aid to transfer information effectively • Convey information effectively adopting the formal or informal communication |
| Underpinning Knowledge and Attitudes | Demonstrate knowledge of: <ul style="list-style-type: none"> • Effective communication |

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| | <ul style="list-style-type: none"> • Different modes of communication • Written communication • Organizational policies • Communication procedures and systems • Technology relevant to the enterprise and the individual's work responsibilities |
| Underpinning Skills | <p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • Follow simple spoken language • Perform routine workplace duties following simple written notices • Participate in workplace meetings and discussions • Complete work related documents • Estimate, calculate and record routine workplace measures • Do basic mathematical processes of addition, subtraction, division and multiplication • relate to people of social range in the workplace • Gather and provide information in response to workplace Requirements |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level II | |
|---|---|
| Unit Title | Work in Team Environment |
| Unit Code | TRD LMS2 13 0215 |
| Unit Descriptor | This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team. |

| Elements | Performance Criteria |
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| 1. Describe team role and scope | <p>1.1 The role and objective of the team are identified from available sources of information.</p> <p>1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources.</p> |
| 2. Identify own role and responsibility within team | <p>2.1 Individual role and responsibilities within the team environment are identified.</p> <p>2.2 Roles and responsibility of other team members are identified and recognized.</p> <p>2.3 Reporting relationships within team and external to team are identified.</p> |
| 3. Work as a team member | <p>3.1 Effective and appropriate forms of communications are used and interactions undertaken with team members who contribute to known team activities and objectives.</p> <p>3.2 Effective and appropriate contributions are made to complement team activities and objectives, based on individual skills and competencies and workplace context.</p> <p>3.3 Protocols are observed in reporting using standard operating procedures.</p> <p>3.4 Contribution is made to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members.</p> |

| Variable | Range |
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| Role and objective of team | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Work activities in a team environment with enterprise or specific sector • Limited discretion, initiative and judgment maybe demonstrated on the job, either individually or in a team environment |
| Sources of information | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Standard operating and/or other workplace procedures • Job procedures • Machine/equipment manufacturer's specifications and instructions |

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| | <ul style="list-style-type: none"> • Organizational or external personnel • Client/supplier instructions • Quality standards • OHS and environmental standards |
| Workplace context | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Work procedures and practices • Conditions of work environments • Legislation and industrial agreements • Standard work practice including the storage, safe handling and disposal of chemicals • Safety, environmental, housekeeping and quality guidelines |

| Evidence Guide | |
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| Critical aspects of competence | <p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • Operate in a team to complete workplace activity • Work effectively with others • Convey information in written or oral form • Select and use appropriate workplace language • Follow designated work plan for the job • Report outcomes |
| Underpinning Knowledge and Attitude | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Communication process • Team structure • Team roles • Group planning and decision making |
| Underpinning Skills | <p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • Communicate appropriately, consistent with the culture of the workplace |
| Resource Implications | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level II | |
|---|--|
| Unit Title | Develop Business Practice |
| Unit Code | TRD LMS2 14 0215 |
| Unit Descriptor | This unit covers knowledge, skills and attitude required to establish a business operation from a planned concept. It includes researching the feasibility of establishing a business operation, planning the setting up of the business, implementing the plan and reviewing operations once commenced, customer handling, developing and maintaining business relationships. |

| Elements | Performance Criteria |
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| 1. Identify business opportunities and business skills | <p>1.1 The concept of paradigm shift and means of divergent thinking are elaborated and strategies to look beyond the boundaries are discussed.</p> <p>1.2 Unusual business opportunities are identified.</p> <p>1.3 Feasibility on business skills and personal attributes is assessed and matched against those perceived as necessary for a particular business opportunity.</p> <p>1.4 New behavior on how problems can be the pivotal source of business opportunity is elaborated and experience taken.</p> <p>1.5 Assistance sought with feasibility study of specialist and relevant parties is discussed, as required.</p> <p>1.6 Impact of emerging or changing technology, including e-commerce, on business operations is evaluated.</p> <p>1.7 Practicability of business opportunity is assessed in line with perceived business risks, returns sought, personal preferences and resources available.</p> <p>1.8 Business plan is revised in accordance with the identified opportunities.</p> |
| 2. Plan for the establishment of business operation | <p>2.1 Organizational structure and operations are determined and documented.</p> <p>2.2 Procedures are developed and documented to guide operations.</p> <p>2.3 Financial backing is secured for business operation.</p> <p>2.4 Business legal and regulatory requirements are identified and compiled.</p> <p>2.5 Human and physical resources required to commence business operation are determined.</p> <p>2.6 Recruitment and procurement strategies are developed.</p> |
| 3. Implement Business Development Plan | <p>3.1 Physical and human resources are obtained to implement business operation.</p> <p>3.2 Operational unit is established to support and coordinate business operation.</p> |

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| | <p>3.3 Simulations on the development plan are well discussed and understood.</p> <p>3.4 Implementation manual is discussed and understood.</p> <p>3.5 Marketing the business operation is undertaken.</p> <p>3.6 Monitoring process is developed and implemented for managing operation.</p> <p>3.7 Legal documents are carefully maintained and relevant records kept and updated to ensure validity and accessibility.</p> <p>3.8 Contractual procurement rights for goods and services including contracts with relevant people are negotiated and secured as required in accordance with the business plan.</p> <p>3.9 Options for leasing/ownership of business premises are identified and contractual arrangements completed in accordance with the business plan.</p> |
| <p>4. Review implementation process and take corrective measures</p> | <p>4.1 Review process is developed and implemented for implementation of business operation.</p> <p>4.2 Improvements in business operation and associated management process are identified.</p> <p>4.3 Identified improvements are implemented and monitored for effectiveness.</p> |
| <p>5. Establish contact with customers and clarify needs of customer</p> | <p>5.1 Persuasion strategies are developed and discussed.</p> <p>5.2 Welcoming customer environment is maintained and Customer is greeted warmly according to enterprise policies and procedures.</p> <p>5.3 Information is provided to satisfy customer needs.</p> <p>5.4 Information on customers and service history is gathered for analysis.</p> <p>5.5 Customer data is maintained to ensure database relevance and currency.</p> <p>5.6 Customer needs are accurately assessed against the products/services of the enterprise.</p> <p>5.7 Customer details are documented clearly and accurately in required format.</p> <p>5.8 Negotiations are conducted in a business-like and professional manner.</p> <p>5.9 Benefits for all parties are maximized in the negotiation through use of established techniques and in the context of establishing long term relationships.</p> <p>5.10 The results of negotiations are communicated to appropriate colleagues and stakeholders within appropriate timeframes.</p> <p>5.11 Opportunities to maintain regular contact with customers are identified and taken-up.</p> |

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| 6. Develop and Maintain Business Relationship | <p>6.1 Features and benefits of products/services provided by the enterprise are described/ recommended to meet customer needs.</p> <p>6.2 Alternative sources of information/advice are discussed with the customer.</p> <p>6.3 Information needed is pro-actively sought, reviewed and acted upon to maintain sound business relationships.</p> <p>6.4 Agreements are honored within the scope of individual responsibility.</p> <p>6.5 Adjustments to agreements are made in consultation with the customer and information shared with appropriate colleagues.</p> <p>6.6 Relationships are nurtured through regular contact and use of effective interpersonal and communication styles.</p> |
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| Variable | Range |
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| Unusual Business opportunities | May include but not limited to: <ul style="list-style-type: none"> • Public holidays • Ceremonies • Natural disaster • Campaigns |
| Business opportunities | May include but not limited to: <ul style="list-style-type: none"> • Expected financial viability • Skills of operator • Amount and types of finance available • Returns expected or required by owners • Likely return on investment • finance required • Lifestyle issues |
| Business skills and personal attributes | May include but not limited to: <ul style="list-style-type: none"> • Technical and/ or specialist skills • Managerial skills • Entrepreneurial skills • Taking calculated risk skills • Willingness to take calculated risks • Willingness to work under pressure |
| Specialist and relevant parties | May include but not limited to: <ul style="list-style-type: none"> • Chamber of commerce • Financial planners and financial institution representatives, business planning specialists and marketing specialists • Accountants • Lawyers and providers of legal advice • Government agencies • Industry/trade associations • Online gateways • Business brokers/business consultants |
| Business risks | May include but not limited to: <ul style="list-style-type: none"> • Occupational health and safety |

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| | <ul style="list-style-type: none"> • Environmental risks • Relevant legislative requirements • Security of investment • Market competition • Security of premises/location • Supply and demand • Resources available |
| Human and physical resources | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Software and hardware • Office premises and equipment • Communications equipment • Specialist services through outsourcing, contracting and consultancy • Staff • Vehicles |
| Operational unit | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • different departments, sections, teams, divisions, etc. staffed with required personnel and equipped to service and support business |
| Legal documents | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Partnership agreements, constitution documents, statutory books for companies (register of members, register of directors and minute books), certificate of Incorporation, franchise agreements and financial documentation, appropriate software for financial records • Occupational Health Safety (OHS) • Recordkeeping including personnel, financial, taxation, and environmental |
| Contracts with relevant people | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • business owners, suppliers, employees, agents, land owners, distributors, customers or any person with whom the business has, or seeks to have, a performance-based relationship |
| Negotiation techniques | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Identification of goals, limits • Clarification of needs of all parties • Listening and questioning • Non-verbal communication techniques • Appropriate language and situation • Bargaining • Developing options • Appropriate cultural behavior • Confirming agreements |
| Opportunities to maintain regular contact | <p>to maintain regular contact with customers may include:</p> <ul style="list-style-type: none"> • Informal social occasions • Ceremonies • Exhibitions • Industry functions • Association membership • Co-operative promotions • Program of regular telephone contact |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates knowledge and skills in:</p> <ul style="list-style-type: none"> • that a business operation has been planned and implemented from initial research of feasibility of the business and completion of the plan, through implementing the plan and commencing operations • the ability to evaluate the results of research and assess the likely viability and practicability of a business opportunity, taking into account the current business/market climate and resources available • treating customers in a courteous and professional manner • building and maintaining relationships to achieve successful business outcomes |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Paradigm shift • Unusual business opportunities • Feasibility study • Business structure • Federal and regional government legislative requirements affecting business operations, especially in regard to Occupational Health and Safety (OHS), Equal Employment Opportunity (EEO), industrial relations and anti-discrimination • Procurement and recruitment strategy • Operational unit • Monitoring process • Business systems and operations • Relevant marketing, management, sales and financial concepts • Options for financing • Business premises and ownership • Lease • Methods for researching business opportunities • Methods of identifying relevant specialist services to complement the business • Advertising and promotion • Distribution and logistics • Terms and conditions in contractual agreement • Record keeping duties • Operational factors relating to the business (provision of professional services, products) • Customer need assessment • Source of information • Operational knowledge of enterprise policies and procedures in regard to: <ul style="list-style-type: none"> ➢ customer service ➢ dealing with difficult customers ➢ maintenance of customer databases ➢ allocated duties/responsibilities ➢ General knowledge of the range of enterprise merchandise and services, location of telephone extensions and |

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| | <p>departments/sections</p> <ul style="list-style-type: none"> • Basic operational knowledge of industry/workplace codes of practice in relation to customer service • negotiation and communication techniques appropriate to negotiations that may be of significant commercial value |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Hunting and exploiting unusual business opportunities • Interpreting legal requirements, company policies and procedures and immediate, day-to-day demands • Conducting feasibility study • Developing new behavior • Using technology • Marketing skills • Business planning skills • Entrepreneurial skills • Time management skills • Customer handling skills • Communication skills including questioning, clarifying, reporting, and giving and receiving constructive feedback • Technical and analytical skills to interpret business documents, reports and financial statements and projections • Ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities • Problem solving skills to develop contingency plans • Using computers and software packages to record and manage data and to produce reports • Interpreting business information, numeracy skills for data analysis to aid research • Negotiation to conduct business activities • Research to identify a business opportunity and to conduct a feasibility study • Analytical skills to assess personal attributes and to identify business risks • Observation skills for identifying appropriate people, resources and to monitor work • Persuasion and networking skills • Welcoming customers • Information seeking skills to collect, organize and understand information related to collating and analyzing customer information to identify needs • Establish diagnostic processes which identify and recommend improvements to customer service |
| Resource Implications | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level II | |
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| Unit Title | Standardize and Sustain 3S |
| Unit Code | TRD LMS2 15 0215 |
| Unit Descriptor | This unit of competence covers the knowledge, skills and attitudes required by worker to standardize and sustain 3S to his/her workplace. It covers responsibility for the day- to-day operations of the workplace and ensuring that continuous improvements of Kaizen elements are initiated and institutionalized. |

| Elements | Performance Criteria |
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| 1. Prepare for work. | <p>1.1 Work instructions are used to determine job requirements, including method, material and equipment.</p> <p>1.2 Job specifications are read and interpreted following working manual.</p> <p>1.3 OHS requirements, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work.</p> <p>1.4 Safety equipment and tools are identified and checked for safe and effective operation.</p> <p>1.5 Tools and equipment are prepared and used to implement 3S.</p> |
| 2. Standardize 3S. | <p>2.1 Plan is prepared and used to standardize 3S activities.</p> <p>2.2 Tools and techniques to standardize 3S are prepared and implemented based on relevant procedures.</p> <p>2.3 Checklists are followed for standardize activities and reported to relevant personnel.</p> <p>2.4 The workplace is kept to the specified standard.</p> <p>2.5 Problems are avoided by standardizing activities.</p> |
| 3. Sustain 3S. | <p>3.1 Plan is prepared and followed to standardize 3S activities.</p> <p>3.2 Tools and techniques to sustain 3S are discussed, prepared and implemented based on relevant procedures.</p> <p>3.3 Workplace is inspected regularly for compliance to specified standard and sustainability of 3S techniques.</p> <p>3.4 Workplace is cleaned up after completion of job and before commencing next job or end of shift.</p> <p>3.5 Situations are identified where compliance to standards is unlikely and actions specified in procedures are taken.</p> <p>3.6 Improvements are recommended to lift the level of compliance in the workplace.</p> <p>3.7 Checklists are followed to sustain activities and reported to relevant personnel.</p> |

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| | 3.8 Problems are avoided by sustaining activities. |
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| Variable | Range |
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| OHS requirements | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Are to be in accordance with legislation/ regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances. • Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices. • Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation. |
| Safety equipment and tools | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • dust masks / goggles • glove • working cloth • first aid • safety shoes |
| Tools and equipment | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • paint • hook • sticker • signboard • nails • shelves • chip wood • sponge • broom • pencil • shadow board/ tools board |
| Tools and techniques | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • 5S Job Cycle Charts • Visual 5S • The Five Minute 5S • Standardization level checklist • 5S checklist • The five Whys and one How approach(5W1H) • Suspension • Incorporation • Use Elimination |
| Relevant | May include but not limited to: |

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| procedures | <ul style="list-style-type: none"> • Assign 3S responsibilities • Integrate 3S duties into regular work duties • Check on 3S maintenance level • OHS measures such as signage, symbols / coding and labeling of workplace and equipment • Creating conditions to sustain your plans • Roles in implementation |
| Reporting | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • verbal responses • data entry into enterprise database • brief written reports using enterprise report formats |
| Relevant personnel | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • supervisors, managers and quality managers • administrative, laboratory and production personnel • internal/external contractors, customers and suppliers |
| Tools and techniques | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • 5S slogans • 5S posters • 5S photo exhibits and storyboards • 5S newsletter • 5S maps • 5S pocket manuals • 5S department/benchmarking tours • 5S months • 5S audit • Awarding system • Big cleaning day • Patrolling system may include: <ul style="list-style-type: none"> ➢ Top management Patrol ➢ 5S Committee members and Promotion office Patrol ➢ Mutual patrol ➢ Self-patrol ➢ Checklist patrol ➢ Camera patrol |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • Discuss the relationship between Kaizen elements. • Standardize and sustain 3S activities by applying appropriate tools and techniques. |
| Underpinning Knowledge and Attitudes | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Elements of Kaizen • Ways to improve Kaizen elements • Benefits of improving kaizen elements • Relationship between Kaizen elements • The fourth pillar of 5S • Benefits of standardizing and sustaining 3S • Procedures for standardizing and sustaining 3S activities • Tools and techniques to sustain 3S |

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| | <ul style="list-style-type: none"> • Relevant Occupational Health and Safety (OHS) and environment requirements • Plan and report • Method of communication |
| Underpinning Skills | <p>Demonstrates skills of:</p> <ul style="list-style-type: none"> • improving Kaizen elements by applying 5S • standardizing and sustaining procedures and techniques to avoid problems • technical drawing • procedures to standardizing 3S activities • analyzing and preparing shop layout of the workplace • standardizing and sustaining checklists • preparing and implementing tools and techniques to sustain 3S • working with others • reading and interpreting documents • observing situations • solving problems by applying 5S • communication skills • preparing labels, slogans, etc. • gathering evidence by using different means • using Kaizen board properly in accordance the procedure • reporting activities and results using report formats |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

NTQF Level III

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Verify Density Measurements |
| Unit Code | TRD LMS3 01 0215 |
| Unit Descriptor | This unit of Competence covers the knowledge, skills and attitudes needed to identify, inspect, verify and decision based on the legal aspect of density measuring instruments under legal metrology control. It also involves the installation and/or simple repair of density measuring instruments. |

| Elements | Performance Criteria |
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| 1. Plan and Prepare Tasks | <p>1.1 Density measuring instruments to be verified are identified.</p> <p>1.2 Appropriate equipment and standards are selected based on the standard requirement.</p> <p>1.3 Density measuring is cleaned if necessary.</p> <p>1.4 Supportive documents and reference standards are prepared and used.</p> |
| 2. Perform maintenance (simple repair) | <p>2.1 Availability of all accessories and parts is checked.</p> <p>2.2 The functionality of the density measuring instruments is checked.</p> <p>2.3 Installation or simple repair is performed in accordance with legislation, organizational guidelines and Instrument manual (if required).</p> |
| 3. Pre-verification | <p>2.1 Preliminary check is conducted in accordance to the working procedure.</p> <p>2.2 Reference solution depending on the instrument to be verified is prepared.</p> <p>2.3 Data sheet is prepared for data collection.</p> |
| 4. Perform verification | <p>3.1 The standard instrument and density measuring instruments are handled using handling according to the procedures and put gently in the prepared solutions.</p> <p>3.2 Readings are collected as per the standard requirement.</p> <p>3.3 The standard and density measuring instruments are put in its clean storage case.</p> |
| 5. Generate result and act | <p>4.1 Error calculation is performed by subtracting the instrument reading from the standard value.</p> <p>4.2 The maximum error calculated is taken.</p> <p>4.3 The maximum error is compared against the maximum permissible error.</p> <p>4.4 Conformance report is prepared and verification sticker or</p> |

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| | stamp put in accordance to legislation or organizational procedure if the result comply the standard requirement; otherwise take an action based on the law. |
| 6. Maintain statutory/Legal records | <p>5.1 Test reports are used to present verification results in the required format.</p> <p>5.2 Verification documentation is completed in accordance with legislative requirements and organizational procedures</p> <p>5.3 Accurate and complete records are kept in accordance with licensing requirements</p> |

| Variable | Range |
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| Density measuring instruments | may include: <ul style="list-style-type: none"> • Hydrometer • Saccharometer • Viscometer |
| Equipment and standards | may include: <ul style="list-style-type: none"> • Standard hydrometer • Solution containing jar • Thermometer |
| Supportive documents and reference standards | may include: <ul style="list-style-type: none"> • Reference Standard Certificates of Verification • Test procedures for verifying measuring instruments • Organizational procedures e.g. company quality assurance manual • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures material data safety sheets • Equipment manuals and warranty, supplier catalogues and handbooks |
| Reference solution | may include: <ul style="list-style-type: none"> • Standard solution with different value of density • CRM(certified reference materials) |
| Maximum permissible errors | may include: <ul style="list-style-type: none"> • The Maximum allowable deviation of the instrument reading from the true value/standard readings/ |
| Verification | Includes initial and periodic/subsequent verification |
| Verification Sticker or stamp | may include: <ul style="list-style-type: none"> • A mark attached on verified instrument when it fulfils the standard requirement |

| Evidence Guide | |
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| Critical Aspects of Competence | Assessment requires evidence that the candidate: <ul style="list-style-type: none"> • Identify, access and apply test procedures • Identify and use suitable reference standards • Install and repair density measuring instruments to meet statutory requirements • Carried out verification • Conduct error calculation, interpret and take actions |

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| | <ul style="list-style-type: none"> • Report results in the required formats and expected timeframe |
| Underpinning Knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Design, major components and functions for density measuring instruments • Licensing requirements for a verifier including: <ul style="list-style-type: none"> ➢ Quality management system ➢ License conditions ➢ Maintenance of statutory records • General chemical and physical principles and concepts including weight, mass, density, volume and gravity • Knowledge of the operating procedures across a range of environments including laboratories, retail, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs. • Knowledge of metrological terms and terminology specific to density measuring instruments such as maximum permissible errors, traceability, uncertainty, maximum permissible difference, eccentricity, repeatability, error of measurement, error of indication and linearization. • National measurement legislation applicable to density measuring instruments • Detailed knowledge of national test procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➢ Purpose of test ➢ Test conditions and possible environmental impacts on performance of the instrument ➢ Key preparation/measurement steps in test method ➢ Calculation steps to give results in appropriate units and precision ➢ Maximum permissible errors for density measuring instrument under verification • Procedures for completing verification documentation • Organisational policy and procedures for verifying density measuring instruments • Safety principles and procedures relevant to instruments and test environment <ul style="list-style-type: none"> ➢ Basic first aid and site safety induction if required ➢ Types and uses of equipment and standards ➢ Safe handling procedures in using measuring instruments and standards • Four fundamental operation of mathematics • Practicing and applying legal metrology aspects based on law and standards |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Diagnosing faults in density measuring instruments • Installing and repairing density measuring instruments with a basic design • Accessing, interpreting and applying a range of documents for the verification of density measuring instruments including: <ul style="list-style-type: none"> ➢ National measurement legislation |

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| | <ul style="list-style-type: none"> ➤ Routine national test procedures ➤ Certificates of approval ➤ National measurement verification policy ➤ National and international design rules ➤ Pattern approval documents • Accessing and interpreting Certificates of Verification for a limited range of reference standards • Performing verifications over durations of up to one day in routine environments • Using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ Explain the purpose of verification ➤ Inform traders of non-compliances and consequences of failing to rectify them ➤ Explain verification procedures and outcomes to traders and managers • Accessing, transporting, setting up, validating, using and maintaining a limited range of test equipment and reference standards • Identifying and evaluating environmental impacts on performance of a range of density measuring instruments • Conducting tests and recording results with close attention to detail and accuracy • Performing calculations involving: <ul style="list-style-type: none"> ➤ Fractions, decimals, ratios, proportions and percentages ➤ Scientific notation, correct units and the correct number of significant figures ➤ Interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation • Analysing performance results over a number of operating conditions • Planning routine tasks • Developing/implementing an efficient verification strategy that has a limited impact on traders, the public, employees and suppliers • Demonstrating professionalism and maintaining the rights of the trader at all times • Solving routine/expected problems • Working safely which may include applying basic first aid, confined space entry and working with heavy machinery • Communication skills |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be accessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Verify Clinical Measurements |
| Unit Code | TRD LMS3 02 0215 |
| Unit Descriptor | This unit of Competence covers the knowledge, skills and attitudes needed to identify, inspect, verify and decision based on the legal aspect of clinical measuring instruments under legal metrology control. It also involves the installation and/or simple repair of clinical measuring instruments. |

| Elements | Performance Criteria |
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| 1. Plan and Prepare Tasks | <p>1.1 Clinical measuring instruments to be verified are identified.</p> <p>1.2 Appropriate equipment and standards are selected based on the standard requirement working procedure.</p> <p>1.3 Equipment and standards are cleaned if necessary.</p> <p>1.4 Supportive documents and reference standards are prepared and used.</p> |
| 2. Perform maintenance (simple repair) | <p>2.1 Availability of all accessories and parts is checked.</p> <p>2.2 The functionality of the clinical measuring instruments is checked.</p> <p>2.3 Installation or simple repair is performed in accordance with legislation, organizational guidelines and Instrument manual (if required).</p> |
| 3. Pre-verification | <p>3.1 Preliminary check is conducted in accordance to the working procedure.</p> <p>3.2 The instrument to be verified is made ready.</p> <p>3.3 Data sheet is prepared for data collection.</p> |
| 4. Perform verification | <p>4.1 The standard instruments and clinical measuring instruments are handled using safe handling procedure to conduct verification.</p> <p>4.2 Readings are collected as per the standard requirement.</p> <p>4.3 The standard and clinical measuring instruments are put clean storage case.</p> |
| 5. Generate result and act | <p>5.1 Error calculation is performed by subtracting the instrument reading from the standard value.</p> <p>5.2 The maximum error calculated is taken.</p> <p>5.3 The maximum error is compared against the maximum permissible error.</p> <p>5.4 Conformance report is prepared and verification sticker or stamp put according to the legislation organizational procedure if the result comply the standard requirement;</p> |

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| | otherwise take an action based on the law. |
| 6. Maintain statutory/Legal records | <p>6.1 Test reports are used to present verification results in the required format</p> <p>6.2 Verification documentation is completed in accordance with legislative requirements and organizational procedures</p> <p>6.3 Accurate and complete records are kept in accordance with licensing requirements</p> |

| Variable | Range |
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| Clinical measuring instrument | <p>May include:</p> <ul style="list-style-type: none"> • Autoclave (pressure & temperature); • Clinical thermometers; • Manometers; • TLDs; • Clinical glass wares; • Syringe |
| Equipment and standards | <p>May include:</p> <ul style="list-style-type: none"> • Reference pressure gauges, thermometers, standard weights, • Precision balances • Pipette clasper • Holders • Hooks |
| Supportive documents and reference standards | <p>May include:</p> <ul style="list-style-type: none"> • Reference Standard Certificates of Verification • Test procedures for verifying measuring instruments • Organizational procedures e.g. company quality assurance manual • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures material data safety sheets • Equipment manuals and warranty, supplier catalogues and handbooks |
| Maximum permissible errors | <p>May include</p> <ul style="list-style-type: none"> • The Maximum allowable deviation of the instrument reading from the true value/standard readings |
| Verification | Includes both initial and periodic/subsequent verification |
| Verification sticker or stamp | <p>May include:</p> <ul style="list-style-type: none"> • A mark attached on verified instrument when it fulfills the standard requirement |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> • Identify, access and apply test procedures • Identify and use suitable reference standards • Install and repair clinical measuring instruments to meet statutory requirements • Carried out verification |

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| | <ul style="list-style-type: none"> • Conduct error calculation, interpret and take actions • Report results in the required formats and expected timeframe |
| Underpinning Knowledge | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Design, major components and functions for clinical measuring instruments • Licensing requirements for a verifier including: <ul style="list-style-type: none"> ➢ Quality management system ➢ License conditions ➢ Maintenance of statutory records • General chemical and physical principles and concepts including weight, mass, density, volume, temperature, pressure, radiation, and gravity • Knowledge of the operating procedures across a range of environments including laboratories, retail, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs. • Knowledge of metrological terms and terminology specific to density measuring instruments such as maximum permissible errors, traceability, uncertainty, maximum permissible difference, eccentricity, repeatability, error of measurement, error of indication and linearization. • National measurement legislation applicable to density measuring instruments • Detailed knowledge of national test procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➢ Purpose of test ➢ Test conditions and possible environmental impacts on performance of the instrument ➢ Key preparation/measurement steps in test method ➢ Calculation steps to give results in appropriate units and precision ➢ Maximum permissible errors for clinical measuring instrument under verification • Procedures for completing verification documentation • Organisational policy and procedures for verifying clinical measuring instruments • Safety principles and procedures relevant to instruments and test environment are: <ul style="list-style-type: none"> ➢ Basic first aid and site safety induction if required ➢ Types and uses of equipment and standards ➢ Safe handling procedures in using measuring instruments and standards • Four fundamental operation of mathematics • Practicing and applying legal metrology aspects based on law and standards |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Diagnosing faults in clinical measuring instruments • Installing and repairing clinical measuring instruments with a basic design • Accessing, interpreting and applying a range of documents for |

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| | <p>the verification of clinical measuring instruments including:</p> <ul style="list-style-type: none"> ➤ National measurement legislation ➤ Routine national test procedures ➤ Certificates of approval ➤ National measurement verification policy ➤ National and international design rules ➤ Pattern approval documents <ul style="list-style-type: none"> • Accessing and interpreting Certificates of Verification for a limited range of reference standards • Performing verifications over durations of up to one day in routine environments • Using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ Explain the purpose of verification ➤ Inform traders of non-compliances and consequences of failing to rectify them ➤ Explain verification procedures and outcomes to traders and managers • Accessing, transporting, setting up, validating, using and maintaining a limited range of test equipment and reference standards • Identifying and evaluating environmental impacts on performance of a range of clinical measuring instruments. • Conducting tests and recording results with close attention to detail and accuracy • Performing calculations involving: <ul style="list-style-type: none"> ➤ Fractions, decimals, ratios, proportions and percentages ➤ Scientific notation, correct units and the correct number of significant figures ➤ Interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation • Analysing performance results over a number of operating conditions • Planning routine tasks • Developing/implementing an efficient verification strategy that has a limited impact on traders, the public, employees and suppliers • Demonstrating professionalism and maintaining the rights of the trader at all times • Solving routine/expected problems • Working safely which may include applying basic first aid, confined space entry and working with heavy machinery • Communication skills |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be accessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Verify Agricultural Measurements |
| Unit Code | TRD LMS3 03 0215 |
| Unit Descriptor | This unit of Competence covers the knowledge, skills and attitudes needed to identify, inspect, verify and decision based on the legal aspect of agricultural measuring instruments under legal metrology control. It also involves installation and or simple repair of measurements in agriculture. |

| Elements | Performance Criteria |
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| 1. Plan and Prepare Tasks | <p>1.1 Measuring instruments to be verified are identified.</p> <p>1.2 Appropriate equipment and standards are selected based on the standard requirement.</p> <p>1.3 Supportive documents and reference standards are prepared and used.</p> |
| 2. Perform maintenance (simple repair) | <p>2.1 Availability of all accessories and parts of instrument to be verified is checked.</p> <p>2.2 The functionality of the measuring instruments is checked.</p> <p>2.3 Installation or simple repair is performed in accordance with legislation, organizational guidelines and Instrument manual (if required).</p> |
| 3. Pre-verification | <p>3.1 Preliminary check is conducted in accordance to the working procedure, if required.</p> <p>3.2 Data sheet is prepared for data collection.</p> |
| 4. Perform verification | <p>4.1 The standard instruments and measuring instruments are handled using safe handling procedure to conduct verification.</p> <p>4.2 Readings are collected as per the standard requirement.</p> <p>4.3 The standard and agricultural measuring instruments clean are put clean storage place.</p> |
| 5. Generate result and act | <p>5.1 Error calculation is performed by subtracting the instrument reading from the standard value.</p> <p>5.2 The maximum error calculated is taken.</p> <p>5.3 The maximum error is compared against the maximum permissible error.</p> <p>5.4 Conformance report is prepared and verification sticker put if the result comply the standard requirement; otherwise an action is taken based on the law.</p> |

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| 6. Maintain statutory/Legal records | <p>6.1 Test reports are used to present verification results in the required format.</p> <p>6.2 Verification documentation is completed in accordance with legislative requirements and organizational procedures.</p> <p>6.3 Accurate and complete records are kept in accordance with licensing requirements.</p> |
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| Variable | Range |
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| Measuring Instruments | May include the following but not limited to: <ul style="list-style-type: none"> • Hectoliter, • Moisture meter, • Alcoholmeters. |
| Equipment and Standards | May include the following but not limited to: <ul style="list-style-type: none"> • Working standards for relevant measuring instruments • Handling equipment • Supplementary materials and devices |
| Supportive documents and reference standards | May include the following but not limited to: <ul style="list-style-type: none"> • Reference Standard Certificates of Verification • Test procedures for verifying measuring instruments • Organizational procedures e.g. company quality assurance manual • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures material data safety sheets • Equipment manuals and warranty, supplier catalogues and handbooks |
| Accessories and parts | May include the following but not limited to: <ul style="list-style-type: none"> • Displays • Levers • Pans • Pointers • Electrical and mechanical components |
| Maximum permissible errors | The Maximum allowable deviation of the instrument reading from the true value/standard readings/ |
| Verification | Includes both initial and periodic/subsequent verification |
| Verification sticker or stamp | A mark attached on verified instrument when it fulfills the standard requirement |

| Evidence Guide | |
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| Critical Aspects of Competence | Assessment requires evidence that the candidate: <ul style="list-style-type: none"> • Identify, access and apply test procedures • Identify and use suitable reference standards • Conduct small repair agricultural measuring instruments to meet statutory requirements • Carried out verification • Conduct error calculation, interpret and take actions • Report results in the required formats and expected timeframe |
| Underpinning | Demonstrate knowledge and understanding of: |

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| Knowledge | <ul style="list-style-type: none"> • Design, major components and functions for agricultural measuring instruments. • Licensing requirements for a verifier including: <ul style="list-style-type: none"> ➢ Quality management system ➢ License conditions ➢ Maintenance of statutory records • General chemical and physical principles and concepts including temperature, pressure, volume, weight, mass and gravity • Knowledge of the operating procedures across a range of environments including laboratories, retail, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs. • Knowledge of metrological terms and terminology specific to weighing instruments such as maximum permissible errors, traceability, uncertainty, maximum permissible difference, eccentricity, repeatability, error of measurement, error of indication and linearization. • National measurement legislation applicable to agricultural measuring instruments • Detailed knowledge of national test procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➢ Purpose of test ➢ Test conditions and possible environmental impacts on performance of the instrument ➢ Key preparation/measurement steps in test method ➢ Calculation steps to give results in appropriate units and precision ➢ Maximum permissible errors for agricultural measuring instruments under inspection • Procedures for completing verification documentation <ul style="list-style-type: none"> • Organisational policy and procedures for verifying agricultural measuring instruments • Safety principles and procedures relevant to instruments and test environment <ul style="list-style-type: none"> ➢ basic first aid and site safety induction if required ➢ Types and uses of equipment and standards ➢ Safe handling procedures in using measuring instruments and standards ➢ Four fundamental operation of mathematics ➢ Practicing and applying legal metrology aspects based on law and standards |
| Underpinning Skills | <p>Demonstrate skills in:</p> <ul style="list-style-type: none"> • Diagnosing faults in agricultural measuring instruments • Installing and repairing agricultural measuring instruments with a basic design • Accessing, interpreting and applying a range of documents for the verification of agricultural measuring instruments including: <ul style="list-style-type: none"> ➢ National measurement legislation |

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| | <ul style="list-style-type: none"> ➤ Routine national test procedures ➤ Certificates of approval ➤ National measurement institute verification policy ➤ National and international design rules ➤ Pattern approval documents • Accessing and interpreting Certificates of Verification for a limited range of reference standards • Performing verifications over durations of up to one day in routine environments • Using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ Explain the purpose of verification ➤ Inform traders of non-compliances and consequences of failing to rectify them ➤ Explain verification procedures and outcomes to traders and managers • Accessing, transporting, setting up, validating, using and maintaining a limited range of test equipment and reference standards • Identifying and evaluating environmental impacts on performance of a range of agricultural measuring instruments • Conducting tests and recording results with close attention to detail and accuracy • Performing calculations involving: <ul style="list-style-type: none"> ➤ Fractions, decimals, ratios, proportions and percentages ➤ Scientific notation, correct units and the correct number of significant figures ➤ Interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation • Analysing performance results over a number of operating conditions • Planning routine tasks • Developing/implementing an efficient verification strategy that has a limited impact on traders, the public, employees and suppliers • Demonstrating professionalism and maintaining the rights of the trader at all times • Solving routine/expected problems • Working safely which may include applying basic first aid, confined space entry and working with heavy machinery • Communication skills |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Verify Automatic Weighing Instruments |
| Unit Code | TRD LMS3 04 0215 |
| Unit Descriptor | This unit of Competence covers the knowledge, skills and attitudes needed to identify, inspect, verify and decision based on the legal aspect of automatic weighing instruments under legal metrology control. It also involves simple repair of automatic weighing instruments. |

| Elements | Performance Criteria |
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| 1. Plan and Prepare Tasks | <p>1.1 Measuring instruments to be verified are identified.</p> <p>1.2 Appropriate equipment and standards are selected based on the standard requirement.</p> <p>1.3 Weights and balances are cleaned if necessary.</p> <p>1.4 Supportive documents and reference standards are prepared and used.</p> |
| 2. Perform maintenance (simple repair) | <p>2.1 Availability of all accessories and parts of instrument to be verified is checked.</p> <p>2.2 The functionality of the automatic weighing measuring instruments is checked.</p> <p>2.3 Installation or simple repair is performed in accordance with legislation, organizational guidelines and Instrument manual (if required).</p> |
| 3. Pre-verification | <p>3.1 Preliminary check is conducted in accordance to the working procedure.</p> <p>3.2 Balances are put in a level position and the reading is confirmed zero, if required.</p> <p>3.3 Data sheet is prepared for data collection.</p> |
| 4. Perform verification | <p>4.1 The standard weights are handled using handling procedures and put gently on the balance.</p> <p>4.2 Readings are collected as per the standard requirement.</p> <p>4.3 The standard weights are put in clean storage case.</p> |
| 5. Generate result and act | <p>5.1 Error calculation is performed by subtracting the instrument reading from the standard value.</p> <p>5.2 The maximum error calculated is taken.</p> <p>5.3 The maximum error is compared against the maximum permissible error.</p> <p>5.4 Conformance report is prepared and verification sticker put if the result comply the standard requirement; otherwise an action is taken based on the law.</p> |

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| 6. Maintain statutory/legal records | <p>6.1 Test reports are used to present verification results in the required format</p> <p>6.2 Verification documentation is completed in accordance with legislative requirements and organizational procedures</p> <p>6.3 Accurate and complete records are kept in accordance with licensing requirements</p> |
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| Variable | Range |
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| Measuring Instruments | <p>May include:</p> <ul style="list-style-type: none"> • Automatic catch weighers; • Filling machines; • Hopper scales; • Conveyor belt scales; • Road and rail weighbridges |
| Equipment and Standards | <p>May include:</p> <ul style="list-style-type: none"> • Standard weights • Standard weight lifting and handling equipment |
| Supportive documents and reference standards | <p>May include:</p> <ul style="list-style-type: none"> • Reference Standard Certificates of Verification • Test procedures for verifying measuring instruments • Organizational procedures e.g. company quality assurance manual • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures material data safety sheets • Equipment manuals and warranty, supplier catalogues and handbooks |
| Accessories and parts | <p>May include:</p> <ul style="list-style-type: none"> • Supplement weights of balances • Level indicator • Pan • Load cells • Display • Electrical and mechanical components |
| Maximum permissible errors | The Maximum allowable deviation of the instrument reading from the true value/standard readings/ |
| Verification | Includes both initial and periodic/subsequent verification |
| Verification sticker or stamp | A mark attached on verified instrument when it fulfills the standard requirement |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> • Identify, access and apply test procedures • Identify and use suitable reference standards • Conduct small repair automatic weighing instruments to meet statutory requirements • Carried out verification |

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| | <ul style="list-style-type: none"> • Conduct error calculation, interpret and take actions • Report results in the required formats and expected timeframe |
| Underpinning Knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Design, major components and functions for automatic balances. • Licensing requirements for a verifier including: <ul style="list-style-type: none"> ➢ Quality management system ➢ License conditions ➢ Maintenance of statutory records • General chemical and physical principles and concepts including weight, mass and gravity • Knowledge of the operating procedures across a range of environments including laboratories, retail, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs. • Knowledge of metrological terms and terminology specific to weighing instruments such as maximum permissible errors, traceability, uncertainty, maximum permissible difference, eccentricity, repeatability, error of measurement, error of indication and linearization. • National measurement legislation applicable to automatic weighing instruments • Detailed knowledge of national test procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➢ Purpose of test ➢ Test conditions and possible environmental impacts on performance of the instrument ➢ Key preparation/measurement steps in test method ➢ Calculation steps to give results in appropriate units and precision ➢ Maximum permissible errors for weighing instruments under inspection • Procedures for completing verification documentation • Organisational policy and procedures for verifying automatic weighing instruments • Safety principles and procedures relevant to instruments and test environment are: <ul style="list-style-type: none"> ➢ basic first aid and site safety induction if required ➢ Types and uses of equipment and standards ➢ Safe handling procedures in using measuring instruments and standards ➢ Four fundamental operation of mathematics ➢ Practicing and applying legal metrology aspects based on law and standards |
| Underpinning Skills | <p>Demonstrates skills of:</p> <ul style="list-style-type: none"> • Diagnosing faults in weighing instruments • Installing and repairing weighing instruments with a basic design • Accessing, interpreting and applying a range of documents |

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| | <p>for the verification of weighing instruments including:</p> <ul style="list-style-type: none"> ➤ National measurement legislation ➤ Routine national test procedures ➤ Certificates of approval ➤ National measurement institute verification policy ➤ National and international design rules ➤ Pattern approval documents <ul style="list-style-type: none"> • Accessing and interpreting Certificates of Verification for a limited range of reference standards • Performing verifications over durations of up to one day in routine environments • Using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ Explain the purpose of verification ➤ Inform traders of non-compliances and consequences of failing to rectify them ➤ Explain verification procedures and outcomes to traders and managers • Accessing, transporting, setting up, validating, using and maintaining a limited range of test equipment and reference standards • Identifying and evaluating environmental impacts on performance of a range of weighing instruments • Conducting tests and recording results with close attention to detail and accuracy • Performing calculations involving: <ul style="list-style-type: none"> ➤ Fractions, decimals, ratios, proportions and percentages ➤ Scientific notation, correct units and the correct number of significant figures ➤ Interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation • Analysing performance results over a number of operating conditions • Planning routine tasks • Developing/implementing an efficient verification strategy that has a limited impact on traders, the public, employees and suppliers • Demonstrating professionalism and maintaining the rights of the trader at all times • Solving routine/expected problems • Working safely which may include applying basic first aid, confined space entry and working with heavy machinery • Communication skills |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Verify Measurements in Road Traffic |
| Unit Code | TRD LMS3 05 0215 |
| Unit Descriptor | This unit of Competence covers the knowledge, skills and attitudes needed to identify, inspect, verify and decision based on the legal aspect of road traffic measuring instruments under legal metrology control. It also involves installation and or simple repair of measurements in road traffic. |

| Elements | Performance Criteria |
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| 1. Plan and prepare tasks | <p>1.1 Measuring instruments to be verified are identified.</p> <p>1.2 Appropriate equipment and standards are selected based on the standard requirement.</p> <p>1.3 Supportive documents and reference standards are prepared and used.</p> |
| 2. Perform maintenance (simple repair) | <p>2.1 Availability of all accessories and parts of instrument to be verified is checked.</p> <p>2.2 The functionality of the measuring instruments is checked.</p> <p>2.3 Installation or simple repair is performed in accordance with legislation, organizational guidelines and Instrument manual (if required).</p> |
| 3. Pre-verification | <p>3.1 Preliminary check is conducted in accordance to the working procedure, if required.</p> <p>3.2 Data sheet is prepared for data collection.</p> |
| 4. Perform verification | <p>4.1 The standard instruments and measuring instruments are handled using safe handling procedure to conduct verification.</p> <p>4.2 Readings are collected as per the standard requirement.</p> <p>4.3 The standard and road traffic measuring instruments are put in clean storage place.</p> |
| 5. Generate result and act | <p>5.1 Error calculation is performed by subtracting the instrument reading from the standard value.</p> <p>5.2 The maximum error calculated is taken.</p> <p>5.3 The maximum error is compared against the maximum permissible error.</p> <p>5.4 Conformance report is prepared and verification sticker put if the result comply the standard requirement; otherwise an action is taken based on the law.</p> |

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| 6. Maintain statutory/Legal records | <p>6.1 Test reports are used to present verification results in the required format.</p> <p>6.2 Verification documentation is completed in accordance with legislative requirements and organizational procedures.</p> <p>6.3 Accurate and complete records are kept in accordance with licensing requirements.</p> |
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| Variable | Range |
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| Measuring Instruments | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Taximeters; • Tachometers; • Speed meters (radar, laser), • Tire pressure gauges; • Breath analyzers |
| Equipment and standards | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Working standards for relevant measuring instruments • Handling equipment • Supplementary materials and devices |
| Supportive documents and reference standards | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Reference Standard Certificates of Verification • Test procedures for verifying measuring instruments • Organizational procedures e.g. company quality assurance manual • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures material data safety sheets • Equipment manuals and warranty, supplier catalogues and handbooks |
| Accessories and parts | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Displays • Electrical and mechanical components |
| Maximum permissible errors | The Maximum allowable deviation of the instrument reading from the true value/standard readings/ |
| Verification | Includes both initial and periodic/subsequent verification |
| Verification sticker or stamp | A mark attached on verified instrument when it fulfills the standard requirement |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Assessment requires evidence that the candidate should:</p> <ul style="list-style-type: none"> • Identify, access and apply test procedures • Identify and use suitable reference standards • Conduct small repair road traffic measuring instruments to meet statutory requirements • Carried out verification • Conduct error calculation, interpret and take actions • Report results in the required formats and expected timeframe |
| Underpinning Knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Design, major components and functions for road traffic |

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| | <p>measuring instruments.</p> <ul style="list-style-type: none"> • Licensing requirements for a verifier including: <ul style="list-style-type: none"> ➤ Quality management system ➤ License conditions ➤ Maintenance of statutory records • General chemical and physical principles and concepts including temperature, pressure, weight, mass and gravity • Knowledge of the operating procedures across a range of environments including laboratories, retail, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs. • Knowledge of metrological terms and terminology specific to weighing instruments such as maximum permissible errors, traceability, uncertainty, maximum permissible difference, eccentricity, repeatability, error of measurement, error of indication and linearization. • National measurement legislation applicable to road traffic measuring instruments • Detailed knowledge of national test procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➤ Purpose of test ➤ Test conditions and possible environmental impacts on performance of the instrument ➤ Key preparation/measurement steps in test method ➤ Calculation steps to give results in appropriate units and precision ➤ Maximum permissible errors for road traffic measuring instruments under inspection • Procedures for completing verification documentation • Organisational policy and procedures for verifying road traffic measuring instruments • Safety principles and procedures relevant to instruments and test environment <ul style="list-style-type: none"> ➤ basic first aid and site safety induction if required ➤ Types and uses of equipment and standards ➤ Safe handling procedures in using measuring instruments and standards ➤ Four fundamental operation of mathematics ➤ Practicing and applying legal metrology aspects based on law and standards |
| Underpinning Skills | <p>Demonstrate skills of</p> <ul style="list-style-type: none"> • Diagnosing faults in road traffic measuring instruments • Installing and repairing road traffic measuring instruments with a basic design • Accessing, interpreting and applying a range of documents for the verification of road traffic measuring instruments including: <ul style="list-style-type: none"> ➤ National measurement legislation ➤ Routine national test procedures ➤ Certificates of approval ➤ National measurement institute verification policy |

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| | <ul style="list-style-type: none"> ➤ National and international design rules ➤ Pattern approval documents • Accessing and interpreting Certificates of Verification for a limited range of reference standards • Performing verifications over durations of up to one day in routine environments • Using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ Explain the purpose of verification ➤ Inform traders of non-compliances and consequences of failing to rectify them ➤ Explain verification procedures and outcomes to traders and managers • Accessing, transporting, setting up, validating, using and maintaining a limited range of test equipment and reference standards • Identifying and evaluating environmental impacts on performance of a range of road traffic measuring instruments • Conducting tests and recording results with close attention to detail and accuracy • Performing calculations involving: <ul style="list-style-type: none"> ➤ Fractions, decimals, ratios, proportions and percentages ➤ Scientific notation, correct units and the correct number of significant figures ➤ Interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation • Analysing performance results over a number of operating conditions • Planning routine tasks • Developing/implementing an efficient verification strategy that has a limited impact on traders, the public, employees and suppliers • Demonstrating professionalism and maintaining the rights of the trader at all times • Solving routine/expected problems • Working safely which may include applying basic first aid, confined space entry and working with heavy machinery • Communication skills |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Perform Installation and Calibration of Measuring Instruments |
| Unit Code | TRD LMS3 06 0215 |
| Unit Descriptor | This unit covers selecting and installing appropriate sensors and signal transmitters, maintaining and diagnosing correct operation of sensors and signal transmitters, and completing fault documentation for measuring electro mechanical device. |

| Elements | Performance Criteria |
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| 1. Prepare and plan | <p>1.1 Object or component to be measured is identified according to procedures</p> <p>1.2 Measuring tools are selected in line with job requirements having the necessary documents</p> |
| 2. Maintenance. | <p>2.1. Preventative maintenance schedules and procedures are applied using knowledge of device characteristics and principles of operation to maintain sensors, transmitters and final control elements in optimum condition.</p> <p>2.2. Sensing elements are cleaned and serviced using knowledge of device characteristics and principles of operation to maintain optimum operating condition particularly at the process interface, using correct principles, tools, test equipment, techniques and procedures.</p> <p>2.3. Sensors, transmitters and final control elements within the system or as individual devices are diagnosed using appropriate test equipment and procedures to determine correct operation or malfunction.</p> <p>2.4. Operation of sensors, transmitters and final control is done.</p> |
| 3. Install. | <p>3.1. Sensors, transmitters and final control elements are installed using sound working knowledge of installation principles, procedures, techniques, tools and test equipment, according to appropriate codes of practice, standards, safety and legislative requirements.</p> <p>3.2. Signal and process are planned during installation access for maintenance and mounting connections for power.</p> <p>3.3. Installed sensors, transmitters and final control elements are diagnosed for correct operation using appropriate test equipment and procedures. Results are assessed against specifications or manufacturers' technical data sheets</p> |

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| 4. Calibrate. | <p>4.1 Sensors, transmitters and final control elements are calibrated against appropriate physical standards using correct calibration devices, test equipment, techniques and procedures.</p> <p>4.2 Zero, span and range tests are performed using correct calibration devices, test equipment, principles, techniques and procedures.</p> <p>4.3 Zero span and range results are assessed against manufacturers' instructions sheets.</p> <p>4.4 Zero, span adjustments are applied to align sensors, transmitters, control loop and final control elements to manufacturers' instruction sheets using correct calibration equipment, principles, techniques and procedures.</p> |
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| Variable | Range |
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| Test equipment | <ul style="list-style-type: none"> Manometers, dead weight testers, vacuum system, power supplies, control valve test beds, pneumatic, analogue, digital test and calibration equipment, utilized for maintenance, calibration and testing of process signal converters and final control elements |
| Control loop | <ul style="list-style-type: none"> A feedback system responding to analogue or digital configuration data via Programmable Logic Controllers (PLCs), DCS, computer-based systems etc. from the controller response to set points and manual output changes |
| Final control elements | <p>High level tolerances which include:</p> <ul style="list-style-type: none"> Proportional Integrated Differential (PID) Supervisory Control and Data Acquisition (SCADA) Distributive Control System (DCS) |

| Evidence Guide | |
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| Critical Aspects of Competency | Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts. |
| Underpinning Knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> characteristics, specifications and principles of operation of the sensors, transmitters and final control elements to be installed criteria for selecting sensors, transmitters and final control elements procedures for testing, installing and maintaining sensors, transmitters and final control elements and for reporting/recording and monitoring faults and/or malfunctions in sensors, transmitters and final control elements factors that determine the type of test equipment required tools, equipment and techniques required to install sensors and transmitters relevant codes, standards, safety and legislative requirements |

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| | <ul style="list-style-type: none"> • connections to be made to sensors, transmitters and final control elements • variations of test results from specifications and probable causes of variations between test results and specifications • Housekeeping requirements with respect to sensors. • test equipment and techniques required to determine correct function or malfunction of sensors, transmitters and final control elements • probable causes of variations between test results and specifications • the need for systematic and/or sequential testing • procedures for configuring, calibrating, testing, adjusting, tuning and validating system performance including sensors, transmitters and final control elements • physical standards against which sensors, transmitters and final control elements are to be calibrated • devices, equipment and techniques required to calibrate sensors, transmitters and final control elements • zero, span and range tests to be applied to the sensors, transmitters and final control elements • procedures for decommissioning sensors, transmitters and final control elements • safety procedures to be taken when decommissioning sensors, transmitters and final control elements |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • accessing relevant data sheets, circuit diagrams, engineering drawings, instructions, specifications, information and supplier catalogues and replacement components • selecting sensors, transmitters and final control elements • installing and testing sensors, transmitters and final control elements to specification • obtaining and performing relevant scheduled/preventative maintenance schedules for sensors, transmitters and final control elements • determining correct function of sensors, transmitters and final control elements • recording test results • identifying, localizing, monitoring and reporting/recording faults in sensors, transmitters and final control elements • preparing sequential action plan to correct faults in sensors, transmitters and final control elements • applying procedures to sequential and loop testing • checking sensors, transmitters and final control elements and marking for replacement, repair or overhaul • repairing/overhauling faulty items for fitting and /or refitting • fitting/ refitting sensors, transmitters and final control elements • preparing fitted/refitted sensors, transmitters and final control elements for testing and calibration • configuring, calibrating, testing, adjusting, tuning and validating system performance |

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| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Test and Calibrate Instrumentation Systems and Equipment |
| Unit Code | TRD LMS3 07 0215 |
| Unit Descriptor | This unit covers the basic knowledge, skills and attitude diagnosing, test and Calibrate instrumentation Systems and equipment |

| Elements | Performance Criteria |
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| 1. Test instrumentation systems and equipment | <p>1.1 Work/test requirements are identified and defined to standard operating procedures.</p> <p>1.2 Correct test application principles are selected after inspection of instrumentation systems, equipment/ components.</p> <p>1.3 Appropriate test equipment is selected in accordance with defined requirements.</p> <p>1.4 Device isolation methods/requirement are/is observed and localized.</p> <p>1.5 Appropriate test procedures and application principles are applied in assessing operation of instrumentation systems, equipment/components.</p> <p>1.6 Normal operating characteristics of instrumentation systems, equipment/components are applied to the level necessary to identify and localize faults.</p> <p>1.7 Characteristics/operational function assessment procedures are applied according to safety and regulatory/site specifications.</p> <p>1.8 Characteristics and operational function are checked and verified.</p> |
| 2. Apply data collection techniques and localize fault condition | <p>2.1 Drawings/diagrams and operational specifications are utilized in identifying and localizing fault conditions.</p> <p>2.2 Where appropriate, built-in fault indicators, error codes are examined and correctly interpreted and results are recorded to standard operating procedures.</p> <p>2.3 Fault condition is localized to major component level using appropriate test equipment principles and procedures.</p> |
| 3. Analyze and report test results | <p>3.1 Test results are analyzed/ verified against operational specifications and localized faults are confirmed.</p> <p>3.2 Potential and real faults are reported using standard operating Procedures.</p> <p>3.3 Faulty conditions are evaluated and corrective action is planned.</p> <p>3.4 Action plan is recorded and documented according to standard operating procedures.</p> |

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| 4. Calibrate instrumentation equipment/components | <p>4.1 Zero, span and range checks are undertaken on Indicators/controllers using correct and appropriate configuration.</p> <p>4.2 Where applicable, methods of adjustment are performed using calibration devices and documented to prescribed procedures and operational specifications.</p> |
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| Variable | Range |
|----------------|---|
| Equipment | <p>may include:</p> <ul style="list-style-type: none"> • Process machines, temperature control systems, sterilization units, water cooling/filtration systems; equipment utilizing • mechanical, pneumatic/electro-pneumatic or electronic principles, associated instruments measuring level, pressure light, flow, current, resistance, voltage, density, temperature |
| Components | <p>may include:</p> <ul style="list-style-type: none"> • Sensors, transmitters, converters, indicators, analyzers, controllers, transducers, power supplies, removable circuit boards and sensor units associated with determining/controlling • density, level, flow, temperature, composition etc of a range of materials |
| Test equipment | <p>may include:</p> <ul style="list-style-type: none"> • System calibrators, manometers, dead weight testers, Wheatstone bridge, potentiometers, frequency/signal • generators, logic probes, millimetres, (analogue/digital), test gauges, cathode ray oscilloscopes and other associated equipment |

| Evidence Guide | |
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| Critical Aspects of Competency | <p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> • competently and consistently perform all elements of the Unit as specified by the criteria, including required knowledge, And be capable of applying the competency in new and different situations and contexts |
| Underpinning Knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Instrumentation principles such as controlling density, level, flow, temperature, composition of a range of materials • effects of resistance, capacitance, inductance and impedance (R,L,C) upon electrical circuit • interpretation requirements of schematic, wiring and block diagrams and circuits |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Obtaining relevant data with respect to the operation of the instrumentation systems/equipment • locating, inspecting and testing arrange of instrumentation system components • isolating instrumentation system/equipment • interpreting all relevant instrumentation circuits, drawings, instructions, manuals and data sheets • checking the individual components within the instrumentation |

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| | <p>system for correct operation</p> <ul style="list-style-type: none"> • dismantling, repairing and reassembling faulty components • selecting correct replacement parts from the manufacturer/supplier catalogues • checking repaired/replaced instrumentation system components for correct operation • complete service reports, and language and literacy skills for recording/documenting test results • checking and verifying the operational functions of the instrumentation system/equipment including reading/recording • built-in indicators obtaining error code interpretation documents • undertaking zero, span and range checks on instrumentation systems/equipment • calibrating instrumentation system/equipment |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be accessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Perform Calibration Checks on Equipment and Assist with Its Maintenance |
| Unit Code | <u>TRD LMS3 08 0215</u> |
| Unit Descriptor | This unit of competence covers the ability to perform setup, pre-use and in-house calibration checks on equipment and assist with its maintenance. This unit of competence is applicable to laboratory assistants working in all industry sectors. |

| Elements | Performance Criteria |
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| 1. Perform setup and pre-use checks of laboratory equipment | 1.1. Laboratory equipment setup and pre-use checks are performed in accordance with enterprise procedures. 1.2. Safety checks are performed in accordance with relevant enterprise and instrumental procedures. 1.3. Faulty or unsafe components and equipment are identified and reported to appropriate personnel 1.4. Instrument log books/records are completed to meet enterprise requirements. |
| 2. Perform calibration checks | 2.1. Equipment is started up according to operating procedures 2.2. Specified standards are used for calibration check 2.3. Equipment is checked as per calibration procedures and schedules. 2.4. All calibration data are recorded accurately and legibly 2.5. Data are compared with specifications and/or previous records to identify non-compliant equipment. 2.6. Out of calibration equipment is quarantined. |
| 3. Assist with equipment maintenance | 3.1. Ensure all equipment work areas are made clean during and after equipment use. 3.2. Basic maintenance is performed in accordance with enterprise procedures. 3.3. Equipment is cleaned and stored according to enterprise and/or manufacturer's specifications/procedures. 3.4. Damaged/worn equipment is identified and replaced, repaired or disposed of as appropriate. |
| 4. Maintain records | 4.1. Information on unsafe or faulty equipment is recorded and reported according to enterprise procedures. |

| Variable | Range |
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| Codes of practice | Where reference is made to Industry codes of practice and Ethiopian/international standards, it is expected the latest version |

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| | will be used |
| Standards, codes, procedures and/or enterprise requirements | <p>such as:</p> <ul style="list-style-type: none"> • Safety in laboratories set • General requirements for the competence of testing and calibration laboratories • Ethiopian code of Good Manufacturing Practice (GMP) for medicinal products • calibration check and maintenance schedules • enterprise recording and reporting procedures • equipment manuals • equipment start up, operation and shutdown procedures • Material Safety Data Sheets (MSDS) • material, production and product specifications • national measurement regulations and guidelines • OHS national standards and codes of practice • principles of Good Laboratory Practice (GLP) • production and laboratory schedules • quality manuals • Standard Operating Procedures (SOPs) |
| Typical equipment and instruments | <p>may include:</p> <ul style="list-style-type: none"> • balances, pipettes, burettes and volumetric glassware • colorimeters/spectrometers and polarimeters • compaction rammers and soil classification equipment • conductivity meters and pH meters • disintegration apparatus, thermometers, incubators and water baths • instrument chart recorders, penetrometers, force measuring equipment and tensiometer • melting point apparatus, viscometers and hardness testing equipment • mixing and separating equipment such as centrifuges, riffles and splitters, and mixers • noise meters and blasting meters • optical microscopes |
| Occupational Health and Safety (OHS) and environmental management requirements | <p>OHS and environmental management requirements:</p> <ul style="list-style-type: none"> • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Nutrition Research Institute and Ministry of Health |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences to:</p> <ul style="list-style-type: none"> • perform setup pre-use checks and shutdown procedures |

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| | <ul style="list-style-type: none"> perform calibration checks of basic equipment using standard procedures obtain readings of the required accuracy and precision recognise non-standard behaviour of instruments assist with maintaining equipment in working order by performing basic maintenance tasks follow all relevant OHS requirements follow enterprise recording and reporting procedures. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> operational principles and methods for equipment use basic sources of error in equipment operation and their control role and importance of correct calibration basic equipment maintenance procedures enterprise communication and reporting procedures relevant OHS and environment requirements |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> performing setup, pre-use checks and shutdown procedures performing calibration checks of basic equipment using standard procedures obtaining readings of the required accuracy and precision identifying non-compliant equipment from specifications and/or previous checks recognising non-standard behaviour of instruments assisting with maintaining equipment in working order by performing basic maintenance tasks following all relevant Occupational Health and Safety (OHS) requirements following enterprise recording and reporting procedures |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> Interview / Written Test Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Inspect a Range of Simple Measuring Instruments |
| Unit Code | TRD LMS3 09 0215 |
| Unit Descriptor | <p>This unit of competency covers the ability to apply National Test Procedures to determine whether a range of simple measuring instruments are suitable for trade use. The unit also involves auditing the performance of verifiers who have previously tested and marked simple measuring instruments for trade use.</p> <p>This unit of competency is applicable to trade measurement inspectors appointed under national measurement legislation who may inspect a wide range of simple measuring instruments as part of their allocated duties. Simple measuring instruments are used in a very wide range of commerce. For example, dip sticks are used to measure bulk petroleum products and beverages, dimensional measuring instruments are used to measure the cubic measurements of packages for freight and length/area instruments are used to accurately measure a wide range of articles sold by reference to those measurements</p> |

| Elements | Performance Criteria |
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| 1. Prepare for inspection | <p>1.1 The type of instrument to be inspected is identified and evaluated.</p> <p>1.2 Any history of previous inspections are accessed and reviewed at trader's premises.</p> <p>1.3 Appropriate documentation required for the inspection is accessed and correctly interpreted.</p> <p>1.4 Test equipment, products and consumables required for the inspection are identified and accessed.</p> <p>1.5 Specified test equipment is ensured to fit for purpose in accordance with applicable legislation and organizational procedures</p> <p>1.6 Test equipment are stored and transported in accordance with organizational procedures and industry best practice.</p> <p>1.7 Workplace health and safety issues relevant to the inspection are identified.</p> |
| 2. Initiate inspection | <p>2.1 The site controller is identified, the purpose of the inspection explained and formal identification produced, if required</p> <p>2.2 Relevant site health and safety issues are identified and appropriate control strategies implemented.</p> <p>2.3 A preliminary evaluation of the site's trading practices is conducted and activities are prioritized to maximize inspection outcomes.</p> <p>2.4 Trade measuring instruments are identified and inspection is planned to minimize disruption to the public and trader.</p> <p>2.5 Locations are identified for product return or disposal, if</p> |

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| | applicable. |
| 3. Evaluate simple measuring instrument performance | <p>3.1 Whether the operating environment will impact on the instrument performance is evaluated.</p> <p>3.2 The operating environment is modified or alternative arrangements are implemented to ensure reliable test conditions as necessary.</p> <p>3.3 The maximum permissible errors for the instrument are identified from the legislative requirements.</p> <p>3.4 Test equipment is used safely in accordance with applicable legislation and organizational procedures.</p> <p>3.5 Instrument is checked for compliance with the appropriate Certificates of Approval.</p> <p>3.6 The instrument is inspected in accordance with relevant National Test Procedure and appropriate National Measurement Institute policy</p> <p>3.7 Results are evaluated against prescribed performance criteria and determined if the instrument is suitable for trade use in accordance with legislative requirements</p> |
| 4. Conduct a verifier performance audit | <p>4.1 The scope of the verifier audit is identified.</p> <p>4.2 The expected outcomes of the verifier audit are identified.</p> <p>4.3 The verifier's performance is assessed against the expected outcome.</p> <p>4.4 Any variances are analyzed from the expected outcomes to identify isolated or systemic problems.</p> |
| 5. Analyse and report inspection results | <p>5.1 Inspection data is analyzed for unacceptable performance trends.</p> <p>5.2 The inspection result on the instrument displayed in accordance with legislative requirements.</p> <p>5.3 Test reports are used to present inspection results in the required format.</p> <p>5.4 Inspection documentation is completed in accordance with legislative requirements and organizational procedures.</p> <p>5.5 Inspection results are communicated within the specified time and in accordance with organizational guidelines.</p> <p>5.6 Follow-up actions are recommended as appropriate.</p> |
| 6. Act on non-compliance | <p>6.1 Applicable enforcement action is selected for the non-compliance in accordance with legislative requirements, organizational policy and procedures.</p> <p>6.2 Traders are informed of non-compliances and consequences of failing to have them corrected.</p> |

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| | <p>6.3 Enforcement action is implemented in accordance with legislative requirements, organizational policy and procedures.</p> <p>6.4 The rights of the trader are maintained at all times.</p> |
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| Variable | Range |
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| Appropriate documentation | <p>may include:</p> <ul style="list-style-type: none"> • Certificates of Verification • reference standards • Certificates of Approval for simple measuring instruments • test procedures for verifying simple measuring instruments • organisational test reports • organisational procedures • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures and Material Safety Data Sheets (MSDS) • equipment manuals and warranty, supplier catalogues and handbooks • National Measurement Institute policy • Ethiopian Standards |
| Test equipment | <p>may include:</p> <ul style="list-style-type: none"> • reference standards of measurement • equipment other than reference standards of measurement e.g. weighing instrument, funnels, manifolds, hoses, water meters, roman levels, tramells and beakers |
| Certificates of Approval | <p>may include:</p> <ul style="list-style-type: none"> • the Certificate issued under national measurement legislation approving the pattern of a simple measuring instrument as being suitable for trade |
| Enforcement action | <p>may include:</p> <ul style="list-style-type: none"> • formal warnings • infringement notice • formal undertaking • injunction • prosecution |
| Prescribed performance criteria for instruments | <p>may include:</p> <ul style="list-style-type: none"> • design is in accordance with the appropriate Certificates of Approval • performance meets the criteria described in the Certificates of Approval, National Test Procedure, legislation and National Measurement Institute policy |
| Legislation | <p>may include:</p> <ul style="list-style-type: none"> • national measurement legislation • applicable OHS legislation |
| National | <p>may include:</p> |

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| Measurement Institute policy | <ul style="list-style-type: none"> • test procedure variations between a verification, in-service or audit inspection • bulletin • instruction • determination |
| National Test Procedures for simple measuring instruments | <p>may include those for:</p> <ul style="list-style-type: none"> • beverage measuring instruments • protein measuring instruments • length measuring instruments • area measuring instruments • dimensional measuring instruments • vehicle tanks • milk tanks • any other test procedure prescribed by the National Measurement Institute |
| OHS and environmental management requirements | <p>refer to:</p> <ul style="list-style-type: none"> • all operations must comply with enterprise occupational health safety and environmental management requirements, which may be imposed through Federal legislation. These requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Nutrition Research Institute and Ministry of Health |
| Operating environmental impacts | <p>may include:</p> <ul style="list-style-type: none"> • vibration • humidity • temperature • dust • electromagnetic interference • out of level |
| Records | <p>may include:</p> <ul style="list-style-type: none"> • test reports • audit reports • safety procedures • a history of equipment calibration and test results |
| Simple measuring instruments | <p>may include:</p> <ul style="list-style-type: none"> • beverage measuring instruments • protein measuring instruments • length measuring instruments • area measuring instruments • dimensional measuring instruments • vehicle tanks • milk tanks • any other instrument prescribed by the National Measurement Institute |
| Trading practices | <p>may include:</p> |

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| | <ul style="list-style-type: none"> • methods used for the sale of goods • advertising • using measuring instruments • position of measuring instruments • environmental factors • suitability of instrument • over-pricing • incorrect measurement |
| Verification | <p>refers to:</p> <ul style="list-style-type: none"> • the inspection of an instrument for the purpose of determining if the instrument meets the legislative requirements for trade use |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences:</p> <ul style="list-style-type: none"> • identify, access and apply test procedures • identify and use suitable reference standards • evaluate and adjust the impact of the operating environment on the performance of the instrument • analyse test results to determine the instrument's suitability for verification (trade use) • identify the scope of a verifier performance audit and assess results with expected outcomes • audit the performance of verifiers of simple measuring instruments • identify and implement additional inspection strategies for non-instrument related breaches of national measurement legislation • recognise and act on non-compliance • maintain the security and confidentiality of data in accordance with organisational and regulatory requirements • report results in the required formats and expected timeframe. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • general chemical and physical principles and concepts including: <ul style="list-style-type: none"> ➢ weight, mass, gravity and density ➢ temperature effects and coefficients of expansion ➢ basic knowledge of the operating procedures across a limited range of environments including laboratories, retail, industrial and farming ➢ knowledge of metrological terms and terminology specific to simple measuring instruments such as maximum permissible errors and traceability ➢ national measurement legislation applicable to simple measuring instruments • detailed knowledge of National Test Procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➢ purpose of test |

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| | <ul style="list-style-type: none"> ➤ test conditions and possible environmental impacts on performance of the instrument ➤ key preparation/measurement steps in test method ➤ calculation steps to give results in appropriate units and precision ➤ maximum permissible errors for simple measuring instruments under inspection • procedures for completing inspection documentation • organisational policy and procedures for inspecting simple measuring instruments |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • accessing, interpreting and applying a range of documents for the inspection of simple measuring instruments including: <ul style="list-style-type: none"> ➤ national measurement legislation ➤ routine National Test Procedures ➤ Certificates of Approval ➤ National Measurement Institute inspection policy ➤ Ethiopian Standards • accessing and interpreting Certificates of Verification for a limited range of reference standards • use routine communication and negotiation skills to: <ul style="list-style-type: none"> ➤ explain the purpose of inspection ➤ inform traders of non-compliances and consequences of failing to rectify them ➤ explain procedures and inspection outcomes to traders, verifiers and managers • accessing, transporting, setting up, validating, using and maintaining a limited range of test equipment and reference standards • identifying and evaluating environmental impacts on performance of a range of simple measuring instruments • conducting tests and recording results with close attention to detail and accuracy • performing calculations involving fractions, decimals, ratios, proportions and percentages • using correct units and the correct number of significant figures • analysing performance results over a single or limited range of operating conditions • identifying non-compliances with national measurement legislation relating to instrument or verifier performance and initiate appropriate enforcement action including warning, infringement notice, undertaking, injunction and prosecution • identifying potential trading practice non-compliance with national measurement legislation and initiating an appropriate inspection strategy • planning routine tasks • developing/implementing an efficient inspection strategy that has a limited impact on others |

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| | <ul style="list-style-type: none"> • demonstrating professionalism and maintaining the rights of the trader at all times • solving routine/expected problems • working safely |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Undertake Routine Inspections and Monitoring |
| Unit Code | TRD LMS3 10 0215 |
| Unit Descriptor | <p>This unit covers the requirements to conduct generally routine inspections and monitoring in accordance with relevant Acts and regulations. Typically work will be under routine guidance with responsibility for assigned duties. It includes organising inspections and monitoring activities, undertaking routine inspections and monitoring activities, acting on non-compliance and providing reports and information.</p> <p>In practice, undertaking routine inspections and monitoring may overlap with other generalist or specialist public sector work activities such as organising workplace information, acting ethically, complying with public sector legislation, using resources, working with diversity, working safely, etc.</p> |

| Elements | Performance Criteria |
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| 1. Organise inspection and monitoring duties | <p>1.1 Activities and responsibilities are identified in accordance with organisational requirements</p> <p>1.2 Procedures, timeframes, resources and equipment requirements are identified in accordance with organisational and task requirements</p> <p>1.3 Resources/equipment are obtained and prepared in accordance with organisational and task requirements</p> <p>1.4 Legislative requirements, risk management practices and occupational health and safety requirements are identified</p> <p>1.5 Communication strategies and development opportunities are identified and tailored to clients' needs, to make them aware of their obligations under relevant legislation, in accordance with organisational policy and procedures</p> <p>1.6 Procedural and information guides are maintained and updated as required</p> |
| 2. Undertake routine inspections and monitoring | <p>2.1 Inspections and monitoring activities are carried out under routine guidance in accordance with organisational and legislative requirements, including occupational health and safety</p> <p>2.2 Risk management practices are implemented as required in accordance with set procedures and timelines</p> <p>2.3 Resources/equipment are used and maintained in accordance with organisational and task requirements</p> <p>2.4 Communication is undertaken with other officers, clients and the public in line with organisational protocols and diversity principles</p> |
| 3. Act on <i>non-compliance</i> | 3.1 Information/education is provided to achieve client compliance |

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| | <p>in accordance with client needs, organisational guidelines, and legislative requirements relating to the seriousness of the possible breach</p> <p>3.2 Further action as a result of failure to achieve compliance is taken in accordance with organisational guidelines and legislative requirements relating to the seriousness of the possible breach</p> <p>3.3 Compliance requirements of legislation/regulations are identified, and contraventions and recommended action are reported in accordance with organisational policy and procedures</p> <p>3.4 Serious or complex situations are referred for advice or resolution in accordance with organisational policy and procedures</p> <p>3.5 The elements of each offence to be prosecuted under relevant legislation are identified, and information/evidence is collected and provided in accordance with legislation, procedures and rules of evidence</p> <p>3.6 When required, court attendance and conduct requirements are fulfilled in compliance with organisational guidelines</p> |
| 4. Provide reports and information | <p>4.1 Records are maintained and reports provided in accordance with organisational requirements</p> <p>4.2 Inspection documentation is interpreted against relevant legislation and information is provided on policies, procedures and guidelines in accordance with organisational requirements</p> <p>4.3 On-the-job coaching is provided in inspection and monitoring in accordance with organisational requirements</p> |

| Variable | Range |
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| Activities | <p>may include:</p> <ul style="list-style-type: none"> • inspections/examinations • monitoring • surveillance • basic audit activities • other compliance assurance activities |
| Procedures | <p>may include:</p> <ul style="list-style-type: none"> • observation • handling procedures • sampling procedures • rejection procedures • storage procedures • disinfection/disinsection procedures • treatment procedures • organisational guidelines and code of conduct • incident reporting procedures |

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| | <ul style="list-style-type: none"> • safety procedures • emergency procedures • evacuation procedures |
| Resources and equipment | <p>may include:</p> <ul style="list-style-type: none"> • inspection equipment • maps, plans • satellite imagery • aerial photographs • survey plans • spatial data and information • cameras • personal protective equipment - respirators, gloves, overalls, boots, hearing protection, goggles, masks etc • test kit equipment • recording equipment • measuring equipment • storage equipment/facilities • entry authority/warrant • Global Positioning System (GPS) equipment • compass • communication equipment • computers • vehicles - 2 or 4 wheel drive |
| Legislation | <p>may include:</p> <ul style="list-style-type: none"> • Quarantine Act, proclamations and regulations • Crimes Act and Criminal Code • Customs Act and regulations • Wildlife Protection Act • Export Control Act • Imported Foods Act • Occupational Health and Safety Act • Government legislation and regulations, such as those relating to: <ul style="list-style-type: none"> ➤ agriculture ➤ horticulture ➤ conservation and land management ➤ fisheries ➤ environmental protection ➤ building ➤ water ➤ emergencies ➤ international legislation/codes of behaviour |
| Inspections and monitoring activities | <p>may relate to:</p> <ul style="list-style-type: none"> • aircraft • airfreight • animal products • animals • cargo • cereals |

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| | <ul style="list-style-type: none"> • collection of biological specimens • disposal of organic waste • fresh produce • goods • land condition, such as: <ul style="list-style-type: none"> ➤ topography ➤ salinity ➤ erosion ➤ weed infestation ➤ vermin infestation ➤ fire hazard ➤ over grazing • land improvements, such as: <ul style="list-style-type: none"> ➤ fences ➤ buildings ➤ sporting or playground equipment ➤ irrigation infrastructure ➤ sewerage infrastructure ➤ waterfront occupations ➤ community structures ➤ land usage ➤ leases and other tenures, to ensure compliance with conditions ➤ licence/permit compliance (e.g. vegetation clearing) ➤ live fish ➤ livestock ➤ mail ➤ mineral samples ➤ passenger baggage ➤ people ➤ pests ➤ plant products ➤ plants ➤ premises ➤ properties ➤ reserves and their use/s ➤ survey activities to maintain readiness for district emergency plans ➤ vector monitoring ➤ vessels |
| Routine guidance | <p>may include:</p> <ul style="list-style-type: none"> • supervisors • senior policy officers • senior inspectors • line managers • project managers • program managers • inspection specialists |
| Risk management practices | <p>may include:</p> <ul style="list-style-type: none"> • monitoring • treatment |

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| | <ul style="list-style-type: none"> • containment • control • eradication • destruction • biosecurity strategies |
| Communication | <p>may include:</p> <ul style="list-style-type: none"> • advice provided in regard to operational experience to a subordinate officer |
| Action | <p>may include:</p> <ul style="list-style-type: none"> • advice • warning • formal notification of intent • infringement notices • on-the-spot fines • court prosecution • seizure of goods |
| Collection of evidence | <p>may include:</p> <ul style="list-style-type: none"> • observation • interviewing • seizure • sampling • specimen collection • recording • photographing • diagrammatic evidence • notes • maintenance of case files • determination of land ownership |
| Records | <p>may include:</p> <ul style="list-style-type: none"> • notes • case files • statistics • forms (application forms, disease notification forms, etc) • notices (seizure notice, infringement notice, etc) • invoices • receipts • commercial documentation such as bills of lading, airway bills |
| Non-compliance | <p>will include:</p> <ul style="list-style-type: none"> • matters of a generally routine nature where action is prescribed, with some discretion to determine appropriate action from a range of set options, and with more serious or complex matters referred to senior staff |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences of:</p> <ul style="list-style-type: none"> • organisational policy and procedures • inspection/examination procedures • undertaking observation and analysis |

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| | <ul style="list-style-type: none"> • writing reports using standard formats • using computers for word processing and recording of statistical data • applying public sector legislation such as occupational health and safety and environment in the context of inspection and monitoring |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • public sector legislation including occupational health and safety, environment, privacy etc • organisational policy and procedures • inspection/examination procedures • monitoring procedures • enabling legislation • elements of an offence • responses to non-compliance • equity and diversity principles • workplace and industry environment |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • undertaking field orientation • undertaking observation and analysis • communicating with a diverse range of clients and staff • responding to diversity, including gender and disability • writing reports using standard formats • using computers for word processing and recording of statistical data • operating workplace equipment and vehicles • applying public sector legislation such as occupational health and safety and environment in the context of inspection and monitoring |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Apply Regulatory Powers |
| Unit Code | TRD LMS3 11 0215 |
| Unit Descriptor | This unit examines the application of regulatory powers conferred by legislation or regulation, including local laws. This unit supports the attainment of skills and knowledge required for competent workplace performance in organizations of all sizes. Knowledge of the legislation and regulations within which organization must operate is essential. |

| Elements | Performance Criteria |
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| 1. Apply enabling legislation or regulation | <p>1.1 Current version of the legislation or regulation is accessed, used and maintained.</p> <p>1.2 Powers conferred under the legislation and associated boundaries are identified and confirmed.</p> <p>1.3 Compliance requirements of the legislation, related regulations, codes of practice and operating policy are identified and confirmed.</p> <p>1.4 Acts and omissions that comprise offences or non-compliance under the legislation are identified and confirmed.</p> <p>1.5 Application of the legislation is made consistent with the boundaries and powers contained therein.</p> <p>1.6 Changes in legislation are monitored for further application.</p> |
| 2. Access and use complementary legislation | <p>2.1 Other legislation or precedents that impact on powers are identified and applied.</p> <p>2.2 Apparent conflict in legislative directions is resolved in accordance with council or authority policies and procedures.</p> <p>2.3 Legislation is considered during development of procedural response.</p> |
| 3. Work with other organizations or departments | <p>3.1 Organizational protocols and procedures are agreed upon and followed when working with other organizations in joint or overlapping jurisdictions.</p> <p>3.2 Agreement as to the lead agency in joint operations or defined breaches is reached and protocols are developed and followed.</p> <p>3.3 Networks and contacts with other agencies are developed to remain up to date on issues of joint concern.</p> |

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| 4. Educate staff in legislative and regulatory requirements | <p>4.1 Information needs are determined to educate supporting, operational and seconded staff.</p> <p>4.2 Procedures and programs are developed to ensure staff members are informed and updated.</p> <p>4.3 Feedback from staff is sought to improve education and procedures.</p> |
| 5. Maintain records | 5.1 Appropriate records reflecting the application of legislation are maintained in accordance with legislative and organizational requirements. |

| Variable | Range |
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| Legislation including complementary legislation | <p>may include:</p> <ul style="list-style-type: none"> • local laws • other legislation including aspects of: <ul style="list-style-type: none"> ➤ common law ➤ contract law ➤ administrative law ➤ food legislation ➤ health ➤ vector and pest control ➤ immunisation ➤ industrial relations law ➤ land management ➤ water and wastewater ➤ conservation ➤ environmental protection ➤ planning ➤ privacy ➤ construction ➤ transport ➤ traffic ➤ education ➤ children's services ➤ electoral act ➤ emergency response ➤ employment and vocational education and training ➤ financial audit act ➤ equal employment opportunity and anti-discrimination ➤ workers compensation ➤ occupational safety and health ➤ workplace relations. |
| Other organisations or departments | <p>may include:</p> <ul style="list-style-type: none"> • government instrumentalities • other departments within authority. |
| Other personnel | <p>may include:</p> <ul style="list-style-type: none"> • federal police • military police • local government law enforcement officers from another council or authority |

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| | <ul style="list-style-type: none"> • fire and rescue • emergency services • coroner's office • administrative appeals tribunals. |
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| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences:</p> <ul style="list-style-type: none"> • Knowledge of principles affecting legislation, regulations and codes of conduct. • capacity to reflect the application of the intent of the legislation and regulations as bound by interpretation, precedent and feedback in meeting community expectations. • Strategic skills to update and educate other staff in the application and implementation of legislation and regulations. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • aspects of criminal law, administrative law, industrial law and contract law • organisational protocols and procedures • equal employment opportunity and equity and diversity principles. |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • scanning techniques to locate information • negotiating strategies to clarify understanding • communication and teamwork • cross-cultural competency • analytical • research • information technology • using an Internet web browser • working with others in a team • reading complex written materials such as legislation, regulations, codes of practice and legal precedents and applying them to work practices and discussion involving complex exchanges of oral information. |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Create and Use Databases |
| Unit Code | TRD LMS3 12 0215 |
| Unit Descriptor | <p>This unit describes the performance outcomes, skills and knowledge required to create simple two table relational databases with reports and queries, for the storage and retrieval of information.</p> <p>This unit applies to individuals employed in a range of work environments that develop and use simple databases to store and retrieve data. They may provide administrative support within an enterprise, or may be independently responsible for the storage and retrieval of data relating to their own work roles.</p> |

| Elements | Performance Criteria |
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| 1. Create a simple database | <p>1.1. A simple database is designed with at least two tables using a database application, basic design principles, software functions and simple formulae.</p> <p>1.2. A table is developed with fields and attributes according to database usage, as well as data considerations and user requirements</p> <p>1.3. A primary key is created for each table</p> <p>1.4. Table layout and field attributes are modified as required.</p> <p>1.5. A relationship between the two tables is created.</p> <p>1.6. Data entered is checked and amended in accordance with organisational and task requirements</p> |
| 2. Create reports and queries | <p>2.1 information output, database tables to be used is determined and layout reported to meet task requirements</p> <p>2.2. Data groupings, search and sort criteria are determined to meet task requirements</p> <p>2.3. Reports and queries are run to check that results and formulae provide the required data</p> <p>2.4. Reports are modified to include or exclude additional requirements.</p> |
| 3. Use database | <p>3.1. Data input is ensured to meet designated time lines and organisational requirements for speed and accuracy.</p> <p>3.2. Manuals, user documentation and online help are used to overcome problems with database design and production.</p> <p>3.3. Database reports or forms are previewed, adjusted and printed in accordance with organisational and task requirements.</p> <p>3.4. Databases are named and stored in accordance with organisational requirements, and application exited without data loss or damage.</p> <p>3.5. Reports are prepared and distributed to appropriate person in a</p> |

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| | suitable format. |
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| Variable | Range |
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| Database application | may include: <ul style="list-style-type: none"> • commercial database applications • organisational specific database applications |
| Basic design principles | may include: <ul style="list-style-type: none"> • naming conventions • data layout • formatting • database use • required output • reporting and presentation requirements |
| Software functions | may include: <ul style="list-style-type: none"> • adding, deleting, moving, re-labelling fields • altering field widths • calculating, using formula • data protection • field definitions and attributes • formatting fields • formatting text • headers and footers • inserting and deleting blank lines and spaces • repeating (if available) • table, form and report wizards |
| Simple formulae | may include: <ul style="list-style-type: none"> • average • count • division • maximum • minimum • multiplication • subtraction • sum • combinations of above |
| Data | may include: <ul style="list-style-type: none"> • numbers • text |
| Checking and amending data | may include: <ul style="list-style-type: none"> • accuracy of data • accuracy of formulae with calculator • ensuring instructions with regard to content and format have been followed • outcome of sorting or filtering • proofreading • spelling, electronically and manually |
| Reported layout | may include: <ul style="list-style-type: none"> • alignment on page |

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| | <ul style="list-style-type: none"> • columns • enhancements to format - borders, patterns and colours • enhancements to text • formatting provided through use of a wizard or other automated process • headers/footers • logical ordering of data • tables |
| Designated time lines | <p>may include:</p> <ul style="list-style-type: none"> • time line agreed with internal or external client • time line agreed with supervisor or person requiring database |
| Printing | <p>may include:</p> <ul style="list-style-type: none"> • forms • queries • records • reports • tables |
| Storing databases | <p>may include:</p> <ul style="list-style-type: none"> • authorised access • filing locations • naming conventions • organisational policy for backing up files • organisational policy for filing hard copies of databases • security • storage in electronic folders and sub-folders • storage on disk drives, CD-ROM, back-up tapes |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences:</p> <ul style="list-style-type: none"> • creating simple databases and queries • manipulating data using queries • formatting data into a final version. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • key provisions of relevant legislation from all forms of government, standards and codes that may affect aspects of business operations, such as: <ul style="list-style-type: none"> ➢ anti-discrimination legislation ➢ ethical principles ➢ codes of practice ➢ privacy laws ➢ occupational health and safety ➢ organisational requirements relating to data entry, storage and presentation. |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • numeracy skills to create simple queries and to use simple formulae • planning and organising skills to develop effective databases • problem-solving skills to address inconsistencies in data and |

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| | issues in database, and to query structures |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Write Simple Documents |
| Unit Code | TRD LMS3 13 0215 |
| Unit Descriptor | <p>This unit describes the performance outcomes, skills and knowledge required to plan, draft and review a basic document before writing the final version.</p> <p>This unit applies to individuals who are skilled operators and apply a broad range of competencies in various work contexts. They may exercise discretion and judgement to produce a range of basic workplace documentation.</p> |

| Elements | Performance Criteria |
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| 1. Plan document | <p>1.1. Audience and purpose for the document are determined.</p> <p>1.2. Format and structure are determined.</p> <p>1.3. Key points are established for inclusion.</p> <p>1.4. Organizational requirements are identified.</p> <p>1.5. Method of communication is established.</p> <p>1.6. Means of communication are established</p> |
| 2. Draft document | <p>2.1. Draft document is developed to communicate key points</p> <p>2.2. Any required additional information is obtained and included.</p> |
| 3. Review document | <p>3.1. Draft is checked for suitability of tone for audience, purpose, and format and communication style.</p> <p>3.2. Draft is checked for readability, grammar, spelling, and sentence and paragraph construction.</p> <p>3.3. Draft is checked for sequencing and structure.</p> <p>3.4. Draft is checked to ensure it meets organizational requirements.</p> <p>3.5. Ensure draft is proofread, where appropriate, by supervisor or colleague.</p> |
| 4. Write final document | <p>4.1. Necessary changes are made and proofread.</p> <p>4.2. Ensure document is sent to intended recipient.</p> <p>4.3. Copy of document is filed in accordance with organizational policies and procedures.</p> |

| Variable | Range |
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| Audience | <p>may include:</p> <ul style="list-style-type: none"> • internal and external customers • recipient/s who receive a copy for information • primary recipient/s of the communication |

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| Purpose | <p>may include:</p> <ul style="list-style-type: none"> • clarification of issues • communication about meetings or events • information • minutes/outcomes of meetings • request for information, advice or assistance • statements of fact • straightforward advice |
| Format | <p>may include:</p> <ul style="list-style-type: none"> • email • forms • letters • memos • minutes of meetings • organisational templates or proformas for letters, memos or reports • tables |
| Structure | <p>may include:</p> <ul style="list-style-type: none"> • organisation of the material to suit the format (e.g. scannability for on-screen use) • treatment of attachments and hyperlinks • visual signposting of material, including use of headings, lists, keywords and text in boxes |
| Organisational requirements | <p>may include:</p> <ul style="list-style-type: none"> • house style requirements • identified authorities for signatories for correspondence/communications • protocols, both written and unwritten for the organisation's internal and external communications • requirements for inclusive and non-discriminatory language and for adherence to copyright legislation |
| Method of communication | <p>may include:</p> <ul style="list-style-type: none"> • inclusive communication • use of active or passive voice • use of the appropriate register or style of language - formal, standard or informal |
| Means of communication | <p>may include:</p> <ul style="list-style-type: none"> • software packages such as MS Word, Excel, PageMaker, PowerPoint and templates |
| Intended recipient | <p>may include:</p> <ul style="list-style-type: none"> • audience for document • signatory of the document • supervisor or other staff member who may add to or forward document to another recipient |

Evidence Guide

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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences of:</p> <ul style="list-style-type: none"> • producing a range of documents that accurately convey |
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| | <p>required basic information</p> <ul style="list-style-type: none"> • using formatting suitable for intended audience • knowledge of organisational policies and procedures for document production. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • basic grammar, spelling and punctuation • communication protocols • how audience, purpose and method of communication influence tone • organisational policies and procedures for document production • resources to assist in document production, such as dictionary, thesaurus, templates, style sheets. |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • literacy skills to read and understand a variety of texts; to prepare general information and papers according to target audience; and to proofread and edit documents to ensure clarity of meaning and conformity to organisational requirements • problem-solving skills to determine document design and production processes. |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level III | |
|--|---|
| Unit Title | Implement and Monitor Environmentally Sustainable Work Practices |
| Unit Code | TRD LMS3 14 0215 |
| Unit Descriptor | <p>This competency covers the outcomes required to effectively analyse the workplace in relation to environmentally sustainable work practices and to implement improvements and monitor their effectiveness.</p> <p>This competency applies to those who have responsibility for a specific area of work or who lead a work group or team. It addresses the knowledge, processes and techniques necessary to implement and monitor environmentally sustainable work practices, including the development of processes and tools. It includes:</p> <ul style="list-style-type: none"> • Identifying areas for improvement • Developing plans to make improvements • Implementing and monitoring improvements in environmental performance. <p>This competency applies to all sectors of the manufacturing industry and members of its value chain. It may also be applied to all sections of an organisation, including office, warehouse etc. This unit will need to be appropriately contextualised as it is applied across an organisation and across different industry sectors.</p> |

| Elements | Performance Criteria |
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| 1. Investigate current practices in relation to resource usage. | <p>1.1 Environmental regulations applying to the enterprise are identified.</p> <p>1.2 Procedures are assessed for assessing compliance with environmental regulations.</p> <p>1.3 Information on environmental and resource efficiency systems and procedures are collected and provided to the work group where appropriate.</p> <p>1.4 Current resource usage is measured and recorded by members of the work group.</p> <p>1.5 Current purchasing strategies are analysed and recorded.</p> <p>1.6 Current work processes are analysed to access information and data and assisted in identifying areas for improvement.</p> |
| 2. Set targets for improvements. | <p>2.1 Input is sought from stakeholders, key personnel and specialists.</p> <p>2.2 External sources of information and data are accessed as required.</p> <p>2.3 Alternative solutions are evaluated to workplace environmental issues.</p> <p>2.4 Efficiency targets are set.</p> |

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| 3. Implement performance improvement strategies. | <p>3.1 Techniques/tools are sourced to assist in achieving targets.</p> <p>3.2 Continuous improvement strategies are applied to own work area of responsibility and ideas and possible solutions communicated to the work group and management.</p> <p>3.3 Environmental and resource efficiency improvement plans for own work group are integrated with other operational activities and implement them.</p> <p>3.4 Seek suggestions and ideas about environmental and resource efficiency management from stakeholders and act upon them where appropriate.</p> <p>3.5 Costing strategies are implemented to fully value environmental assets.</p> |
| 4. Monitor performance. | <p>4.1 Outcomes are documented and reports on targets communicated to key personnel and stakeholders.</p> <p>4.2 Strategies are evaluated.</p> <p>4.3 New targets are set and new tools and strategies investigated and applied.</p> <p>4.4 Successful strategies are promoted and participants rewarded where possible.</p> |

| Variable | Range |
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| Procedures | <p>May include:</p> <ul style="list-style-type: none"> • all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards. • Where reference is made to industry codes of practice, and/or Ethiopian/international standards, the latest version must be used. |
| Compliance | includes meeting relevant federal, state and local government laws, by-laws, regulations and codes of practice. |
| Environmental and resource efficiency | <p>include:</p> <ul style="list-style-type: none"> • addressing environmental and resource sustainability initiatives such as Environmental Management Systems, action plans, surveys and audits • determining enterprise's most appropriate waste treatment including waste to landfill, recycling, re-use and wastewater treatment • applying the waste management hierarchy in the workplace • initiating and/or maintaining appropriate enterprise procedures for operational energy consumption, including stationary energy and non stationary (transport) • efficient use of water • minimising greenhouse gas emissions • use of controls to minimise the risk of environmental damage from hazardous substances |

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| Measuring | <p>Measuring techniques include:</p> <ul style="list-style-type: none"> • material fed to/consumed by plant/equipment • plant meters and gauges • job cards including kanbans • examination of invoices from suppliers • measurements made under different conditions • examination of relevant information and data • others as appropriate to the specific industry contexts. |
| Purchasing strategies | <p>Purchasing strategies include:</p> <ul style="list-style-type: none"> • influencing suppliers to take up environmental sustainability • selecting materials/components with a lower environmental profile. |
| Stakeholders, key personnel and specialists | <p>include individuals and groups both inside and outside the organisation that have some direct interest in the enterprise's conduct, actions, products and services, including:</p> <ul style="list-style-type: none"> • employees at all levels of the organisation • customers • suppliers • other organisations • key personnel within the organisation, and specialists outside it who may have particular technical expertise |
| Techniques and tools | <p>Techniques and tools may include :</p> <ul style="list-style-type: none"> • visual workplace concepts • measurement, display and/or recording devices • changed work practices/procedures • competence development and awareness training • process and equipment items |
| Suggestions | <p>include ideas that help to:</p> <ul style="list-style-type: none"> • prevent and minimise environmental risks and maximise opportunities • reduce emissions of greenhouse gases • reduce use of non-renewable resources • make more efficient use of energy, water and other resources • maximise opportunities to re use and recycle materials • identify strategies to offset or mitigate environmental impacts. e.g. purchasing of carbon credits • express purchasing power through the selection of suppliers with improved environmental performance. e.g. purchasing renewable energy and materials with lower embedded carbon • eliminate the use of hazardous and toxic materials increasing the reusability/recyclability of wastes/products. |
| Incidents | <p>Incidents include:</p> <ul style="list-style-type: none"> • breaches or potential breaches of regulations • occurrences outside of standard procedure which may lead to lower environmental performance |

Evidence Guide

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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences to:</p> <ul style="list-style-type: none"> • monitor and investigate current resource usage |
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| | <ul style="list-style-type: none"> • develop plans to improve sustainability • implement environmental improvements. • environmental performance is routinely monitored and investigated areas for improvements are followed through and the implemented changes are in turn monitored and investigated. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • how to access and use relevant environmental and resource efficiency systems, tools and procedures • understanding of best practice approaches relevant to own area of responsibility • strategies to maximise opportunities and minimise impacts relevant to own work area • relevant environmental and resource efficiency issues specific to industry practices • methods for measuring and calculating resource usage |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • using relevant environmental and resource efficiency systems, tools and procedures • applying quality assurance systems relevant to own work area • applying relevant supply chain procedures • measurement and calculation techniques • communication/consultation skills to ensure information is supplied to the work group • Reading and writing is required to comprehend documentation and interpret environmental and energy efficiency requirements and to document and maintain records • Numeracy is required to interpret numeric workplace information, readings and measurements, handle data as required and complete numeric components of workplace forms/reports. |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Monitor Implementation of Work Plan/Activities |
| Unit Code | TRD LMS3 15 0215 |
| Unit Descriptor | This unit covers competence required to oversee and monitor the quality of work operations within an enterprise. This unit may be carried out by team leaders or supervisors. |

| Elements | Performance Criteria |
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| 1. Monitor and improve workplace operations | <p>1.1 Efficiency and service levels are monitored on an ongoing basis.</p> <p>1.2 Operations in the workplace have been supported overall enterprise goals and quality assurance initiatives.</p> <p>1.3 Quality problems and issues are promptly identified and adjustments made accordingly.</p> <p>1.4 Procedures and systems are changed in consultation with colleagues to improve efficiency and effectiveness.</p> <p>1.5 Colleagues are consulted about ways to improve efficiency and service levels.</p> |
| 2. Plan and organise workflow | <p>2.1 Current workload of colleagues is accurately assessed.</p> <p>2.2 Work is scheduled in a manner which enhances efficiency and customer service quality.</p> <p>2.3 Work is delegated to appropriate people in accordance with principles of delegation.</p> <p>2.4 Workflow is assessed against agreed objectives and timelines and colleagues are assisted in prioritisation of workload.</p> <p>2.5 Input regarding staffing needs is provided to appropriate management.</p> |
| 3. Maintain workplace records | <p>3.1 Workplace records are accurately completed and submitted within required timeframes.</p> <p>3.2 Where appropriate, completion of records is delegated and monitored prior to submission.</p> |
| 4. Solve problems and make decisions | <p>4.1 Workplace problems are promptly identified and considered from an operational and customer service perspective.</p> <p>4.2 Short term action is initiated to resolve the immediate problem where appropriate.</p> <p>4.3 Problems are analysed for any long term impact and potential solutions assessed and actioned in consultation with relevant colleagues.</p> <p>4.4 Where problem is raised by a team member, they are encouraged to participate in solving the problem.</p> |

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| | 4.5 Follow up action is taken to monitor the effectiveness of solutions in the workplace. |
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| Variables | Range |
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| Problems | May include but not limited to: <ul style="list-style-type: none"> • difficult customer service situations • equipment breakdown/technical failure • delays and time difficulties • competence |
| Workplace records | May include but is not limited to: <ul style="list-style-type: none"> • staff records and regular performance reports |

| Evidence Guide | |
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| Critical Aspects of Competence | Demonstrates skills and knowledge in: <ul style="list-style-type: none"> • ability to effectively monitor and respond to a range of common operational and service issues in the workplace • understanding of the role of staff involved in workplace monitoring • knowledge of quality assurance, principles of workflow planning, delegation and problem solving |
| Underpinning Knowledge and Attitudes | Demonstrate knowledge of: <ul style="list-style-type: none"> • roles and responsibilities in monitoring work operations • overview of leadership and management responsibilities • principles of work planning and principles of delegation • typical work organization methods appropriate to the sector • quality assurance principles and time management • problem solving and decision making processes • industrial and/or legislative issues which affect short term work organization as appropriate to industry sector |
| Underpinning Skills | Demonstrate skills to: <ul style="list-style-type: none"> • monitor and improve workplace operations • plan and organize workflow • maintain workplace records |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Apply Quality Control |
| Unit Code | TRD LMS3 16 0215 |
| Unit Descriptor | This unit covers the knowledge, attitudes and skills required in applying quality control in the workplace. |

| Elements | Performance Criteria |
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| 1. Implement quality standards | <p>1.5 Agreed quality standard and procedures are acquired and confirmed.</p> <p>1.6 Standard procedures are introduced to organizational staff/personnel.</p> <p>1.7 Quality standard and procedures documents are provided to employees in accordance with the organization policy.</p> <p>1.8 Standard procedures are revised / updated when necessary.</p> |
| 2. Assess quality of service delivered | <p>2.1 Services delivered are quality checked against organization quality standards and specifications.</p> <p>2.2 Service delivered are evaluated using the appropriate evaluation quality parameters and in accordance with organization standards.</p> <p>2.3 Causes of any identified faults are identified and corrective actions taken in accordance with organization policies and procedures.</p> |
| 3. Record information | <p>3.1 Basic information on the quality performance is recorded in accordance with organization procedures.</p> <p>3.2 Records of work quality are maintained according to the requirements of the organization.</p> |
| 4. Study causes of quality deviations | <p>4.1 Causes of deviations from final outputs or services are investigated and reported in accordance with organization procedures.</p> <p>4.2 Suitable preventive action is recommended based on organization quality standards and identified causes of deviation from specified quality standards of final service or output.</p> |
| 5. Complete documentation | <p>5.1 Information on quality and other indicators of service performance is recorded.</p> <p>5.2 All service processes and outcomes are recorded.</p> |

| Variable | Range |
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| Quality check | May include but not limited to: <ul style="list-style-type: none"> • Check against design / specifications |

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| | <ul style="list-style-type: none"> • Visual inspection and Physical inspection |
| Quality standards | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Materials • Components • Process • Procedures |
| Quality parameters | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Standard Design / Specifications • Material Specification |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • Check completed work continuously against organization standard • Identify and isolate faulty or poor service • Check service delivered against organization standards • Identify and apply corrective actions on the causes of identified faults or error • Record basic information regarding quality performance • Investigate causes of deviations of services against standard • Recommend suitable preventive actions |
| Underpinning Knowledge | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Relevant quality standards, policies and procedures • Characteristics of services • Safety environment aspects of service processes • Evaluation techniques and quality checking procedures • Workplace procedures and reporting procedures |
| Underpinning Skills | <p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • interpret work instructions, specifications and standards appropriate to the required work or service • carry out relevant performance evaluation • maintain accurate work records • meet work specifications and requirements • communicate effectively within defined workplace procedures |
| Resource Implications | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Lead Workplace Communication |
| Unit Code | TRD LMS3 17 0215 |
| Unit Descriptor | This unit covers the knowledge, attitudes and skills needed to lead in the dissemination and discussion of information and issues in the workplace. |

| Elements | Performance Criteria |
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| 1. Communicate information about workplace processes | 1.1 Appropriate communication method is selected. 1.2 Multiple operations involving several topics areas are communicated accordingly. 1.3 Questions are used to gain extra information. 1.4 Correct sources of information are identified. 1.5 Information is selected and organized correctly. 1.6 Verbal and written reporting is undertaken when required. 1.7 Communication skills are maintained in all situations. |
| 2. Lead workplace discussion | 2.1 Response to workplace issues is sought. 2.2 Response to workplace issues are provided immediately. 2.3 Constructive contributions are made to workplace discussions on such issues as production, quality and safety. 2.4 Goals/objectives and action plan undertaken in the workplace are communicated. |
| 3. Identify and communicate issues arising in the workplace | 3.1 Issues and problems are identified as they arise. 3.2 Information regarding problems and issues are organized coherently to ensure clear and effective communication. 3.3 Dialogue is initiated with appropriate staff/personnel. 3.4 Communication problems and issues are raised as they arise. |

| Variable | Range |
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| Methods of communication | May include but not limited to: <ul style="list-style-type: none"> • Non-verbal gestures • Verbal • Face to face • Two-way radio • Speaking to groups • Using telephone • Written • Using Internet • Cell phone |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • Deal with a range of communication/information at one time • Make constructive contributions in workplace issues • Seek workplace issues effectively • Respond to workplace issues promptly • Present information clearly and effectively written form • Use appropriate sources of information • Ask appropriate questions • Provide accurate information |
| Underpinning Knowledge and Attitudes | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Organization requirements for written and electronic communication methods • Effective verbal communication methods |
| Underpinning Skills | <p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • Organize information • Understand and convey intended meaning • Participate in variety of workplace discussions • Comply with organization requirements for the use of written and electronic communication methods |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Lead Small Teams |
| Unit Code | TRD LMS3 18 0215 |
| Unit Descriptor | This unit covers the skills, knowledge and attitudes required to determine individual and team development needs and facilitate the development of the work group. |

| Elements | Performance Criteria |
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| 1. Provide team leadership | <p>1.1 Learning and development needs are systematically identified and implemented in line with organizational requirements.</p> <p>1.2 Learning plan is collaboratively developed and implemented to meet individual and group training and developmental needs.</p> <p>1.3 Individuals are encouraged to self-evaluate performance and areas identified for improvement.</p> <p>1.4 Feedback on performance of team members is collected from relevant sources and compared with established team learning process.</p> |
| 2. Foster individual and organizational growth | <p>2.1 Learning and development program goals and objectives are identified to match the specific knowledge and skills requirements of competence standards.</p> <p>2.2 Learning delivery methods are made appropriate to the learning goals, the learning style of participants and availability of equipment and resources.</p> <p>2.3 Workplace learning opportunities and coaching/ mentoring assistance are provided to facilitate individual and team achievement of competencies.</p> <p>2.4 Resources and timelines required for learning activities are identified and approved in accordance with organizational requirements.</p> |
| 3. Monitor and evaluate workplace learning | <p>3.1 Feedback from individuals or teams is used to identify and implement improvements in future learning arrangements.</p> <p>3.2 Outcomes and performance of individuals/teams are assessed and recorded to determine the effectiveness of development programs and the extent of additional support.</p> <p>3.3 Modifications to learning plans are negotiated to improve the efficiency and effectiveness of learning.</p> <p>3.4 Records and reports of competence are maintained within organizational requirement.</p> |

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| 4. Develop team commitment and cooperation | <p>4.1 Open communication processes are used by team to obtain and share information.</p> <p>4.2 Decisions are reached by the team in accordance with its agreed roles and responsibilities.</p> <p>4.3 Mutual concern and camaraderie are developed in the team.</p> |
| 5. Facilitate accomplishment of organizational goals | <p>5.1 Team members are made actively participatory in team activities and communication processes.</p> <p>5.2 Individual and joint responsibility has been developed teams members for their actions.</p> <p>5.3 Collaborative efforts are sustained to attain organizational goals.</p> |

| Variable | Range |
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| Learning and development needs | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Coaching, mentoring and/or supervision • Formal/informal learning program • Internal/external training provision • Work experience/exchange/opportunities • Personal study • Career planning/development • Performance appraisals • Workplace skills assessment • Recognition of prior learning |
| Organizational requirements | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Quality assurance and/or procedures manuals • Goals, objectives, plans, systems and processes • Legal and organizational policy/guidelines and requirements • Safety policies, procedures and programs • Confidentiality and security requirements • Business and performance plans • Ethical standards • Quality and continuous improvement processes and standards |
| Feedback on performance | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Formal/informal performance appraisals • Obtaining feedback from supervisors and colleagues • Obtaining feedback from clients • Personal and reflective behavior strategies • Routine and organizational methods for monitoring service delivery |
| Learning delivery methods | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • On the job coaching or mentoring • Problem solving • Presentation/demonstration • Formal course participation • Work experience and Involvement in professional networks • Conference/seminar attendance and induction |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • identify and implement learning opportunities for others • give and receive feedback constructively • facilitate participation of individuals in the work of the team • negotiate learning plans to improve the effectiveness of learning • prepare learning plans to match skill needs • access and designate learning opportunities |
| Underpinning Knowledge and Attitude | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • coaching and mentoring principles • understanding how to work effectively with team members who have diverse work styles, aspirations, cultures and perspective • understanding how to facilitate team development and improvement • understanding methods and techniques for eliciting and interpreting feedback • understanding methods for identifying and prioritizing personal development opportunities and options • knowledge of career paths and competence standards in the industry |
| Underpinning Skills | <p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • read and understand a variety of texts, prepare general information and documents according to target audience; spell with accuracy; use grammar and punctuation effective relationships and conflict management • receive feedback and report, maintain effective relationships and conflict management • organize required resources and equipment to meet learning needs • provide support to colleagues • organize information; assess information for relevance and accuracy; identify and elaborate on learning outcomes • facilitation skills to conduct small group training sessions • relate to people from a range of social, cultural, physical and mental backgrounds |
| Resource Implications | Access to relevant workplace or appropriately simulated environment where assessment can take place |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written exam • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the workplace or in a simulated workplace setting |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Improve Business Practice |
| Unit Code | TRD LMS3 19 0215 |
| Unit Descriptor | This unit covers the knowledge, skills and attitudes required in promoting, improving and growing business operations. |

| Elements | Performance Criteria |
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| 1. Diagnose the business | <p>1.1 Sources data is identified; data required for diagnosis is determined and acquired based on the business diagnosis toolkit.</p> <p>1.2 Value chain analysis is conducted.</p> <p>1.3 SWOT analysis of the data is undertaken.</p> <p>1.4 Competitive advantage of the business is determined from the data.</p> |
| 2. Benchmark the business | <p>2.1 Product or service to be benchmarked is identified and selected.</p> <p>2.2 Sources of relevant benchmarking data are identified.</p> <p>2.3 Key indicators are selected for benchmarking in consultation with key stakeholders.</p> <p>2.4 Key indicators of own practice are compared with benchmark indicators.</p> <p>2.5 Areas of improvements are identified.</p> |
| 3. Develop plans to improve business performance | <p>3.1 A consolidated list of required improvements is developed.</p> <p>3.2 Cost-benefit analysis is determined for required improvements.</p> <p>3.3 Work flow changes resulting from proposed improvements are determined.</p> <p>3.4 Proposed improvements are ranked according to agreed criteria.</p> <p>3.5 An action plan is developed and agreed to implement the top ranked improvements.</p> <p>3.6 Organizational structures are checked to ensure they are suitable.</p> |
| 4. Develop marketing plans | <p>4.1 The practice vision statement is reviewed.</p> <p>4.2 Practice objectives are developed/ reviewed.</p> <p>4.3 Market research is conducted and result is obtained.</p> <p>4.4 Target markets are identified/ refined.</p> <p>4.5 Market position is developed/ reviewed.</p> |

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| | <p>4.6 Practice brand is developed.</p> <p>4.7 Benefits of products or services are identified.</p> <p>4.8 Promotion tools are selected and developed.</p> |
| 5. Develop business growth plans | <p>5.1 Plans are developed to increase profitability</p> <p>5.2 Proposed plans are ranked according to agreed criteria.</p> <p>5.3 An action plan is developed and agreed to implement the top ranked plans.</p> <p>5.4 Business work practices are reviewed to ensure they support growth plans.</p> |
| 6. Implement and monitor plans | <p>6.1 Implementation plan is developed in consultation with all relevant stakeholders.</p> <p>6.2 Success indicators of the plan are agreed.</p> <p>6.3 Implementation is monitored against agreed indicators.</p> <p>6.4 Implementation is adjusted as required.</p> |

| Variable | Range |
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| Data sources | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Primary data sources • Secondary sources |
| Data required | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Organization capability • Appropriate business structure • Level of client service which can be provided • Internal policies, procedures and practices • Staff levels, capabilities and structure • Market and market definition • Market changes/market segmentation • Market consolidation/fragmentation • Revenue • Level of commercial activity • Expected revenue levels, short and long term • Revenue growth rate • Break even data • Pricing policy • Revenue assumptions • Business environment • Economic conditions • Social factors • Demographic factors • Technological impacts • Political/legislative/regulative impacts • Competitors, competitor pricing and response to pricing • Competitor marketing/branding • Competitor products |
| SWOT analysis | <p>May include but not limited to:</p> |

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| | <ul style="list-style-type: none"> • Internal strengths such as staff capability, recognized quality • Internal weaknesses such as poor morale, under-capitalization, poor technology • External opportunities such as changing market and economic conditions • External threats such as industry fee structures, strategic alliances, competitor marketing |
| Competitive advantage | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Quality • Pricing • Cost • Location • Technology • Delivery • Timeframe • Promotion • Niche marketing • Support from government |
| Key indicators | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Staffing • Cost and expenses • Personnel productivity (particularly of principals) • Goodwill • Profitability • Price structure • Customers base • Productivity • Quality • System |
| Organizational structures | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Lines of authority and reporting relationship |
| Objectives | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Market share growth • Revenue growth • Profitability • Productivity • Innovation |
| Market position | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • The goods or service provided • Product mix • The core product - what is bought • The tangible product - what is perceived • The augmented product - total package of consumer • Features/benefits • Product differentiation from competitive products • New/changed products • Price and pricing strategies (cost plus, supply/demand, ability to pay, etc.) • Pricing objectives (profit, market penetration, etc.) |

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| | <ul style="list-style-type: none"> • Cost components • Market position • Distribution strategies • Marketing channels • Promotion • Target audience • Communication |
| Practice brand | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Practice image • Practice logo/letterhead/signage • Phone answering protocol • Facility decor • Slogans • Templates for communication/invoicing • Style guide • Writing style • AIDA (Attention, Interest, Desire, Action) |
| Benefits | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Features as perceived by the client • Benefits as perceived by the client |
| Promotion tools | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Networking and referrals • Seminars • Sales promotion • Advertising • Personal selling • Press releases • Publicity and sponsorship • Brochures • Newsletters (print and/or electronic) • Websites • Direct mail • Telemarketing/cold calling |
| Ranking | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Importance • Urgency • Technology • Resource availability |
| Relevant stockholders | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Micro and Small Enterprises development • Non-Government Organizations (NGOs) • Finance institutions • Capital goods leasing enterprise |

Evidence Guide

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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge of:</p> <ul style="list-style-type: none"> • Identifying the key indicators of business performance • Identifying the key market data for the business • A wide range of available information sources |
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| | <ul style="list-style-type: none"> • Acquiring information not readily available within a business • Analyzing data and determine areas of improvement • Negotiating required improvements to ensure implementation • Evaluating systems against practice requirements • Forming recommendations and/or make recommendations • Assessing the accuracy and relevance of information |
| Underpinning Knowledge and Attitudes | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Data gathering and analysis • Value chain analysis • SWOT analysis • Competitive advantage • Cost benefit analysis • Target market • Marketing principles • Organizational structure • Marketing mix • Promotion mix • Market position • Branding <p>Profitability Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Data gathering and analysis • Value chain analysis • SWOT analysis • Competitive advantage • Cost benefit analysis • Target market • Marketing principles • Organizational structure • Marketing mix • Promotion mix • Market position • Branding • Profitability |
| Underpinning Skills | <p>Demonstrates skill in:</p> <ul style="list-style-type: none"> • Benchmarking skills • Communication skills • Computers skills to manipulate data and present information • Negotiation skills • Preparing action plan • Conducting market research • Identifying target market • Identifying suitable marketing mix • Preparing promotional tools • Problem solving • Planning skills • Monitoring and evaluation • Ability to acquire and interpret relevant data • Use of market intelligence • Development and implementation strategies of promotion and |

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| | <p>growth plans</p> <ul style="list-style-type: none"> • Ability to acquire and interpret required data, current practice systems and structures and sources of relevant benchmarking data • Applying methods of selecting relevant key benchmarking indicators • Communication skills • Working and consulting with others when developing plans for the business • Negotiation skills • Using computers to manipulate, present and distribute information |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level III | |
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| Unit Title | Prevent and Eliminate MUDA |
| Unit Code | TRD LMS3 20 0215 |
| Unit Descriptor | This unit of competence covers the knowledge, skills and attitude required by a worker to prevent and eliminate MUDA/wastes in his/her their workplace. It covers responsibility for the day-to-day operation of the work and ensures Kaizen elements are continuously improved and institutionalized. |

| Elements | Performance Criteria |
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| 1. Prepare for work. | <p>1.1 Work instructions are used to determine job requirements, including method, material and equipment.</p> <p>1.2 Job specifications are read and interpreted following working manual.</p> <p>1.3 OHS requirements, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work.</p> <p>1.4 Appropriate material is selected for work.</p> <p>1.5 Safety equipment and tools are identified and checked for safe and effective operation.</p> |
| 2. Identify MUDA. | <p>2.1 Plan of MUDA identification is prepared and implemented.</p> <p>2.2 Causes and effects of MUDA are discussed.</p> <p>2.3 Tools and techniques are used to draw and analyze current situation of the work place.</p> <p>2.4 Wastes/MUDA are identified and measured based on relevant procedures.</p> <p>2.5 Identified and measured wastes are reported to relevant personnel.</p> |
| 3. Eliminate wastes/MUDA. | <p>3. 1. Plan of MUDA elimination is prepared and implemented.</p> <p>3. 2. Necessary attitude and the ten basic principles for improvement are adopted to eliminate waste/MUDA.</p> <p>3. 3. Tools and techniques are used to eliminate wastes/MUDA based on the procedures and OHS.</p> <p>3. 4. Wastes/MUDA are reduced and eliminated in accordance with OHS and organizational requirements.</p> <p>3. 5. Improvements gained by elimination of waste/MUDA are reported to relevant bodies.</p> |
| 4. Prevent occurrence of wastes/MUDA. | <p>4.1 Plan of MUDA prevention is prepared and implemented.</p> <p>4.2 Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement are discussed and prepared.</p> |

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| | <p>4.3 Occurrences of wastes/MUDA are prevented by using visual and auditory control methods.</p> <p>4.4 Waste-free workplace is created using 5W and 1H sheet.</p> <p>4.5 The completion of required operation is done in accordance with standard procedures and practices.</p> <p>4.6 The updating of standard procedures and practices is facilitated.</p> <p>4.7 The capability of the work team that aligns with the requirements of the procedure is ensured.</p> |
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| Variable | Range |
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| OHS requirements | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Are to be in accordance with legislation/ regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances. • Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices. • Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization. • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation. |
| Safety equipment and tools | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • dust masks / goggles • glove • working cloth • first aid • safety shoes |
| Tools and techniques | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Plant Layout • Process flow • Other Analysis tools • Do time study by work element • Measure Travel distance • Take a photo of workplace • Measure Total steps • Make list of items/products, who produces them and who uses them & those in warehouses, storages etc. • Focal points to Check and find out existing problems • 5S • Layout improvement |

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| | <ul style="list-style-type: none"> • Brainstorming • Andon • U-line • In-lining • Unification • Multi-process handling & Multi-skilled operators • A.B. control (Two point control) • Cell production line • TPM (Total Productive Maintenance) |
| Relevant procedures | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Make waste visible • Be conscious of the waste • Be accountable for the waste. • Measure the waste. |
| The ten basic principles for improvement | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Throw out all of your fixed ideas about how to do things. • Think of how the new method will work- not how it won. • Don't accept excuses. Totally deny the status quo. • Don't seek perfection. A 50 percent implementation rate is fine as long as it's done on the spot. • Correct mistakes the moment they are found. • Don't spend a lot of money on improvements. • Problems give you a chance to use your brain. • Ask "why?" at least five times until you find the ultimate cause. • Ten people's ideas are better than one person's. • Improvement knows no limits. |
| Visual and auditory control methods | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Red Tagging • Sign boards • Outlining • Andons • Kanban, etc. |
| 5W and 1H | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Who • What • Where • When • Why • How |

Evidence Guide

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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • discuss why wastes occur in the workplace • discuss causes and effects of wastes/MUDA in the workplace • analyze the current situation of the workplace by using appropriate tools and techniques • identify, measure, eliminate and prevent occurrence of |
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| | <p>wastes by using appropriate tools and techniques</p> <ul style="list-style-type: none"> • use 5W and 1H sheet to prevent |
| Underpinning Knowledge and Attitudes | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Targets of customers and manufacturer/service provider • Traditional and kaizen thinking of price setting • Kaizen thinking in relation to targets of manufacturer/service provider and customer • value • The three categories of operations • the 3“MU” • waste/MUDA • wastes occur in the workplace • The 7 types of MUDA • The Benefits of identifying and eliminating waste • Causes and effects of 7 MUDA • Procedures to identify MUDA • Necessary attitude and the ten basic principles for improvement • Procedures to eliminate MUDA • Prevention of wastes • Methods of waste prevention • Definition and purpose of standardization • Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement • Methods of visual and auditory control • TPM concept and its pillars. • Relevant Occupational Health and Safety (OHS) and environment requirements • Plan and report • Method of communication |
| Underpinning Skills | <p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • draw & analyze current situation of the work place • use measurement apparatus (stop watch, tape, etc.) • calculate volume and area • use and follow checklists to identify, measure and eliminate wastes/MUDA • identify and measure wastes/MUDA in accordance with OHS and procedures • use tools and techniques to eliminate wastes/MUDA in accordance with OHS procedure • apply 5W and 1H sheet • update and use standard procedures for completion of required operation • work with others • read and interpret documents • observe situations • solve problems • communicate |

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| | <ul style="list-style-type: none"> gather evidence by using different means report activities and results using report formats |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> Interview / Written Test Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

NTQF Level IV

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Identify Risks and Apply Risk Management Process |
| Unit Code | TRD LMS4 01 0215 |
| Unit Descriptor | This unit describes the performance outcomes, skills and knowledge required to identify risks and to apply established risk management processes to a subset of an organization or project's operations that are within the person's own work responsibilities and area of operation. |

| Elements | Performance Criteria |
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| 1. Identify risks | <p>1.1 The context is identified for risk management.</p> <p>1.2 Risks are identified using tools by ensuring all reasonable steps have been taken to identify all risks.</p> <p>1.3 Identified risks are documented in accordance with relevant policies, procedures and legislation.</p> |
| 2. Analyse and evaluate risks | <p>2.1 Risks are analyzed and documented in consultation with relevant stakeholders.</p> <p>2.2 Risk categorization is undertaken and level of risk determined.</p> <p>2.3 Analysis processes and outcomes are documented.</p> |
| 3. Treat risks | <p>3.1 Appropriate control measures are determined for risks and assessed for strengths and weaknesses.</p> <p>3.2 Control measures for all risks are identified.</p> <p>3.3 Risks relevant to whole of organization or having an impact beyond own work responsibilities and area of operation are referred to others as per established policies and procedures.</p> <p>3.4 Control measures are chosen and implemented for own area of operation and/or responsibilities.</p> <p>3.5 Treatment plans are prepared and implemented.</p> |
| 4. Monitor and review effectiveness of risk treatment/s | <p>4.1 Implemented treatment/s is/are regularly reviewed against measures of success.</p> <p>4.2 Review results are used to improve the treatment of risks.</p> <p>4.3 Assistance is provided to audit risk in own area of operation.</p> <p>4.4 Management of risk is managed and reviewed in own area of operation.</p> |

| Variable | Range |
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| Context | <p>May include:</p> <ul style="list-style-type: none"> any related projects or organisations |

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| | <ul style="list-style-type: none"> • any resources, including physical assets, which are vital to operations • key operational elements and service of the organisation • organisation or project, how it is organised and its capabilities • own role and responsibilities in relation to overall project or organisation design |
| Risks | <p>May include:</p> <ul style="list-style-type: none"> • commercial and legal relationships • economic circumstances and scenarios • human behaviour • individual activities • management activities and controls • natural events • political circumstances • positive risk • technology - technological issues |
| Tools | <p>May include:</p> <ul style="list-style-type: none"> • documentation to assist in process of identifying risk, and assessing impact and likelihood of occurrence • standard instruments developed for the organisation and contextualised for sections of the workplace's operations, such as checklists and testing procedures • tools to prioritise risks, including where relevant, numerical scoring systems for risks |
| Stakeholders | <p>May include:</p> <ul style="list-style-type: none"> • contractors • employees • financial managers • insurance agents • managers • public • service providers • suppliers • unions • volunteers |
| Risk categorisation | <p>May include:</p> <ul style="list-style-type: none"> • likelihood of risks are: <ul style="list-style-type: none"> ➤ almost certain ➤ likely ➤ possible ➤ unlikely ➤ rare • consequences of risks are: <ul style="list-style-type: none"> ➤ insignificant ➤ minor ➤ moderate ➤ major ➤ catastrophic |

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| | ➤ current control measures |
| Level of risk | <p>May include:</p> <ul style="list-style-type: none"> • low, treated with routine procedures • moderate, with specific responsibility allocated for the risk, and monitoring and response procedures implemented • high, requiring action, as it has potential to be damaging to the organisation or project • extreme, requiring immediate action, as it has potential to be devastating to the organisation or project |
| Control measures | <p>May include:</p> <ul style="list-style-type: none"> • hierarchy of controls are: <ul style="list-style-type: none"> ➤ reduction in likelihood of risks ➤ reduction of consequences of risks ➤ retention of risks ➤ risk aversion ➤ transfer of responsibility of risks |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competencies to:</p> <ul style="list-style-type: none"> • identification, analysis and evaluation of risks • demonstrated understanding of personal role in relation to wider organisational or project context • Demonstrated understanding of risk management processes and procedures. |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Ethiopian and international standards for risk management • key provisions of relevant legislation from all levels of government that may affect aspects of business operations, such as: <ul style="list-style-type: none"> ➤ anti-discrimination legislation ➤ ethical principles ➤ codes of practice ➤ privacy laws ➤ environmental issues ➤ occupational health and safety • organisational policies and procedures relating to risk management processes and strategies • auditing requirements relating to risk management |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • literacy skills sufficient to read and understand a variety of texts; and to write, edit and proofread documents to ensure clarity of meaning, accuracy and consistency of information • research and data collection skills to monitor and evaluate risks • Problem-solving skills to appropriately address identified risks. |

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| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Conduct Pattern Evaluation and Approval |
| Unit Code | TRD LMS4 02 0215 |
| Unit Descriptor | This unit of competence covers the ability (knowledge, skills, and attitudes) to determine facts concerning pattern. It involves the ability to identify type of instrument, assess its design & manufacture, verification, and perform calculations to assess instrument performance as per National Regulations. It also covers the ability (knowledge, skills, and attitudes) to decide (based on judgment) to admit or not to admit the subject pattern to legal use. |

| Elements | Performance Criteria |
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| 1. Plan and prepare tasks | <ul style="list-style-type: none"> 1.1 Pattern approval request is examined 1.2 Category of Instrument or component evaluated for type is identified 1.3 Facilities, equipment, and personnel needed for evaluation are identified and arranged. 1.4 Pattern approval and non-pattern approval requirements for instruments are identified 1.5 Relevant National/International Regulations and Recommendations are identified. 1.6 Standards to use are selected in line with job requirements 1.7 Type approval test results from recognized laboratories in other countries are evaluated (when instruments are not designed and produced in the country) 1.8 Relevant hand tools are available (in the case when instruments are designed and produced in the country) 1.9 Workstation is made ready in accordance with job specifications (in the case when instruments are designed and produced in the country) |
| 2. Perform maintenance (simple repair) | <ul style="list-style-type: none"> 2.1 Availability of all accessories and parts is checked. 2.2 The functionality of the measuring instruments under evaluation is checked. 2.3 Simple repair is performed in accordance with legislation, organizational guidelines and instrument manual (if required). |
| 3. Conduct type evaluation test and Carry out calculations | <ul style="list-style-type: none"> 3.1 Original Equipment Designer or Manufacturers (OEM) are addressed and Contacted (contact Information available) 3.2 Submitted documents are examined. 3.3 Applicable Technical drawings are interpreted. 3.4 Product design is assessed. |

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| | <p>3.5 Technical characteristics of the instrument are checked against relevant regulations/guidelines /Rules</p> <p>3.6 Metrological characteristics of the instrument is checked against relevant regulations/guidelines</p> <p>3.7 Necessary adjustments are done.</p> <p>3.8 Instruments and/or devices are examined and/tested to see the instrument's performance (Initial verification is carried out).</p> <p>3.9 Simple to complex calculations are performed to obtain Instrument measurement result</p> <p>3.10 The Measurement instrument indication error or deviation from nominal value is calculated</p> <p>3.11 Uncertainties originated from Influence factors are estimated.</p> <p>3.12 The measurement result is compared against the maximum deviations recommended by National/International Recommendations.</p> <p>3.13 Evaluations, conclusions drawn, and recommendations are reported.</p> <p>3.14 Verification certificates are prepared following suitable certificate format</p> |
| <p>4. Conduct type Approval of measuring instruments</p> | <p>4.1 If the result comply the standard requirement, verification sticker is put</p> <p>4.2 Report of evaluation is examined in the light of applicable regulations and requirements.</p> <p>4.3 Decision to grant or withhold pattern approval is made (take an action based on the law)</p> <p>4.4 Framing of detailed conditions of pattern approval is done.</p> <p>4.5 Proper decisions/judgments are done in line with government regulations.</p> |
| <p>5. Maintain statutory/Legal records (Manage databases)</p> | <p>5.1 Pattern approval certificate or pattern rejection notice and other relevant documents to applicant are transmitted.</p> <p>5.2 The pattern approval is noticed publicly.</p> <p>5.3 Pattern approval and relevant information and documents are transferred and notifications are made to verifying officers.</p> <p>5.4 Test reports are used to present verification results in the required format.</p> <p>5.5 Verification documentation is completed in accordance with legislative requirements and organizational procedures.</p> <p>5.6 Accurate and complete records are kept in accordance with approval/licensing requirements.</p> |

| Variable | Range |
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| Measuring instruments | May Include but not limited to: <ul style="list-style-type: none"> • Weights • Energy meters • Balances/Scales • Liquid and gas Flow meters • Thermometers • Pressure gauges • Dimension measuring instruments |
| Calculations | Includes the following but not limited to: <ul style="list-style-type: none"> • Weight • Volume • density • pressure • length • temperature |

| Evidence Guide | |
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| Critical Aspects of Competence | Assessment requires evidence that the candidate: <ul style="list-style-type: none"> • Read/Interpret drawings • Install and repair density measuring instruments to meet statutory requirements • Select proper measurement standards according to tasks • Select and use proper reference documents • Follow and apply proper standard procedures/Rules • Carry out measurement and calculations • Manage databases • Able to produce reports |
| Underpinning knowledge | Demonstrate knowledge and attitude of: <ul style="list-style-type: none"> • Types of measuring instruments (Varieties) • Requirements to be fulfilled by measuring instruments • Background knowledge of mathematics and physics • Design and manufacture of measuring instruments • Relations between different physical quantities • Basics of drawing |
| Underpinning skills | Demonstrate skills of: <ul style="list-style-type: none"> • Communication skills • Performing mathematical calculations • Software application skills • Visualizing objects and shapes • Interpreting formulae • Evidence gathering skills and drafting of statements for use in legal proceedings and presentation of evidence in court. |
| Resource Implications | Access is required to real or appropriately simulated situations including work areas; materials and equipment and to information on workplace practices and OHS practices |
| Methods of | Competence may be assessed through: |

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| Assessment | <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Conduct Inspection of Measuring Instruments |
| Unit Code | TRD LMS4 03 0215 |
| Unit Descriptor | This unit of competence covers the ability to apply National Test Procedures to determine whether measuring instruments are suitable for trade and/service use. The unit also involves auditing the performance of verifiers who have previously tested and marked simple measuring instruments for trade/service use. |

| Elements | Performance Criteria |
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| 1. Plan and prepare for inspection | <p>1.1 The type of instrument to be inspected is identified and evaluated.</p> <p>1.2. Any history of previous inspections is accessed and reviewed at trader's premises</p> <p>1.3. Appropriate documentation required for the inspection is accessed and correctly interpreted.</p> <p>1.4. Test equipment, products and consumables required for the inspection are identified and accessed.</p> <p>1.5. Specified test equipment is ensured to fit for purpose in accordance with applicable legislation and organisational procedures.</p> <p>1.6. Test equipment is stored and transported in accordance with organisational procedures and industry best practice.</p> <p>1.7. Workplace health and safety issues relevant to the inspection are identified.</p> |
| 2. Initiate Inspection | <p>2.1. The site controller are identified, the purpose of the inspection explained and formal identification is produced, if required.</p> <p>2.2. Relevant site health and safety issues are identified and appropriate control strategies implemented.</p> <p>2.3 A preliminary evaluation of the site's trading practices is conducted and activities are prioritised to maximise inspection outcomes.</p> <p>2.4. Trade measuring instruments are identified and inspection is planned to minimise disruption to the public and trader.</p> |
| 3. Evaluate measuring instrument performance | <p>3.1. Whether the operating environment will impact on the instrument performance is evaluated.</p> <p>3.2. The operating environment is modified or alternative arrangements are implemented to ensure reliable test conditions as necessary.</p> <p>3.3. The maximum permissible errors for the instrument are identified from the legislative requirements.</p> |

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| | <p>3.4. Test equipment is used safely in accordance with applicable legislation and organizational procedures.</p> <p>3.5. Instrument for compliance is checked with the appropriate Certificates of Approval</p> <p>3.6. The instrument is inspected in accordance with relevant National Test Procedure and appropriate National Measurement Institute policy</p> <p>3.7. Results are evaluated against prescribed performance criteria and determine if the instrument is suitable for trade use in accordance with legislative requirements.</p> |
| 4. Conduct a verifier performance audit | <p>4.1. The scope of the verifier audit is identified.</p> <p>4.2. The expected outcomes of the verifier audit are identified.</p> <p>4.3. The verifier's performance is assessed against the expected outcome.</p> <p>4.4. Any variances from the expected outcomes are analyzed to identify isolated or systemic problems.</p> |
| 5. Analyze and report inspection results | <p>5.1. Inspection data is analyzed for unacceptable performance trends.</p> <p>5.2. The inspection result on the instrument is displayed in accordance with legislative requirements.</p> <p>5.3. Test reports are used to present inspection results in the required format.</p> <p>5.4. Inspection documentation is completed in accordance with legislative requirements and organizational procedures.</p> <p>5.5. Inspection results are communicated within the specified time and in accordance with organizational guidelines.</p> <p>5.6. Follow-up actions are recommended as appropriate.</p> |
| 6. Act on non-compliance | <p>6.1. Applicable enforcement action for the non-compliance is selected in accordance with legislative requirements, organisational policy and procedures.</p> <p>6.2. Traders of non-compliances and consequences are informed of failing to have them corrected.</p> <p>6.3. Enforcement action is implemented in accordance with legislative requirements, organizational policy and procedures.</p> <p>6.4. The rights of the trader are maintained at all times.</p> |

| Variable | Range |
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| Measuring instruments | <p>subject to legal metrology control:</p> <ul style="list-style-type: none"> Weights (different OIML accuracy classes of weights,) non-automatic weighing machines tested without substitution loads automatic Class Y(a) Catch weighers automatic Class Y(b) Catch weighers any other test procedure prescribed by the National Measurement Institute Liquid and gas Flow meters (Fuel dispensers,) Thermometers (Liquid in glass, Platinum Resistance) Pressure gauges (Spygmomanometers, Tyre pressure gauges) Dimension measuring instruments (stainless Steel tape meters, Plastic tape meters, Rulers, V.calipers,Dipsticks) |
| Calculation | <p>Includes the following but not limited to:</p> <ul style="list-style-type: none"> Weight Volume pressure length temperature |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Assessors should ensure that candidates can:</p> <ul style="list-style-type: none"> identify, access and apply test procedures identify and use suitable reference standards evaluate and adjust the impact of the operating environment on the performance of the instrument analyse test results to determine the instrument's suitability for verification (trade use) identify the scope of a verifier performance audit and assess results with expected outcomes audit the performance of verifiers of weighing instruments identify and implement additional inspection strategies for non-instrument related breaches of national measurement legislation recognize and act on non-compliance maintain the security and confidentiality of data in accordance with organizational and regulatory requirements report results in the required formats and expected timeframe. |
| Underpinning knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> Types of measuring instruments (Varieties) knowledge of metrological terms and terminology specific to instrument under question such as maximum permissible errors, traceability, uncertainty, maximum permissible difference, eccentricity, repeatability, error of measurement, error of indication and linearisation national measurement legislation applicable to weighing instruments |

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| | <ul style="list-style-type: none"> • detailed knowledge of National Test Procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➢ purpose of test ➢ test conditions and possible environmental impacts on performance of the instrument ➢ key preparation/measurement steps in test method ➢ calculation steps to give results in appropriate units and precision • maximum permissible errors for weighing instruments under inspection • procedures for completing inspection documentation • organisational policy and procedures for verifying weighing instruments • safety principles and procedures relevant to instruments and test environment • basic first aid and site safety induction if required • knowledge of the operating procedures across a range of environments including laboratories, retail, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs • knowledge of statistics and probability |
| Underpinning skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Communication skills • Procedure reading and writing Skills • Work instruction writing skills • Assembly and disassembly of parts • Drawing skills • Performing mathematical calculations • Software application skills • Visualizing objects and shapes • Interpreting formulae • Non-conforming Task management skills • Report writing skills • solving routine/expected problems • working safely which may include applying basic first aid, confined space entry and working with heavy machinery |
| Resource Implications | Access is required to real or appropriately simulated situations including work areas; materials and equipment and to information on workplace practices and OHS practices |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Conduct Inspection of Pre-packed Products |
| Unit Code | TRD LMS4 04 0215 |
| Unit Descriptor | This unit of competence covers the inspection of pre-packaged products by inspectors to determine whether the marking and measurement requirements of the packaged article comply with national measurement legislation. |

| Elements | Performance Criteria |
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| 1 Prepare for inspection | <p>1.1 The type of pre-packaged products to be inspected are identified and evaluated.</p> <p>1.2 Any history of previous inspections is accessed and reviewed at trader's premises.</p> <p>1.3 Appropriate documentation required for the inspection is accessed and correctly interpreted.</p> <p>1.4 Test equipment, investigation equipment and consumables required for the inspection are identified and accessed.</p> <p>1.5 Specified test equipment is ensured to fit for purpose in accordance with applicable legislation and organisational procedures.</p> <p>1.6 Test equipment is stored and transported in accordance with organizational procedures and industry best practiced.</p> <p>1.7 Workplace health and safety issues relevant to the inspection are identified.</p> |
| 2 Initiate inspection | <p>2.1 The site controller is identified, the purpose of the inspection explained and formal identification is produced, if required</p> <p>2.2 Site workplace health and safety issues are identified and appropriate control strategies implemented.</p> <p>2.3 A preliminary evaluation of the site's trade measurement activities is conducted and inspection prioritized to maximize outcomes.</p> <p>2.4 The range of pre-packaged products at the premises is identified and the inspection is planned to achieve maximum outcomes while minimizing disruption to the public and trader.</p> |
| 3 Inspect packaged article markings | <p>3.1 Generic trade measurement marking requirements are identified for pre-packaged products.</p> <p>3.2 Specific trade measurement marking requirements related to the pre-packaged product selected for inspection are identified.</p> <p>3.3 Measurement, unit pricing and packer identification</p> |

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| | <p>markings on pre-packaged products are assessed for compliance with legislative requirements.</p> |
| <p>4 Measure the net contents of pre-packaged products</p> | <p>4.1 National Test Procedure appropriate for measuring the product is identified and accessed.</p> <p>4.2 Pre-packaged products for measurement are selected in accordance with marketplace intelligence, legislative requirements, organizational policy and procedures.</p> <p>4.3 Product handling and disposal requirements are identified, accessed and applied in accordance with workplace, health and safety and environmental requirements.</p> <p>4.4 Specialized equipment, reference standards and measuring devices are selected in accordance with organizational policy and procedures.</p> <p>4.5 Pre-packaged product is measured in accordance with the appropriate National Test Procedure, organizational policy and procedures.</p> <p>4.6 Results are evaluated against prescribed performance criteria and determined if the net contents of the individual pre-packaged products and inspection lot meet legislative requirements.</p> |
| <p>5 Evaluate trader's measurement process</p> | <p>5.1 The process used by the trader is examined to measure a pre-packaged product.</p> <p>5.2 The effectiveness of the trader's measurement procedure, methodology and test frequency is evaluated against inspection outcomes.</p> <p>5.3 Measuring instrument operating environment is inspected and suitability for purpose assessed.</p> <p>5.4 Measuring instrument operation is evaluated against legislative requirements, organizational policy and procedures.</p> <p>5.5 The operating environment is modified or alternative arrangements are implemented to ensure reliable operating conditions for the measuring instrument as necessary.</p> <p>5.6 The maximum permissible errors for the instrument are identified from the legislative requirements.</p> <p>5.7 Measuring instruments are inspected in accordance with relevant National Test Procedure, organizational policy and procedures.</p> |
| <p>6. Analyze and report inspection results</p> | <p>6.1 Inspection data is analyzed for unacceptable trends</p> <p>6.2 Test reports are used to present inspection results in the required format.</p> <p>6.3 Inspection documentation is completed in accordance with legislative requirements and organizational procedures.</p> <p>6.4 Inspection results are communicated within the specified</p> |

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| | time and in accordance with organizational guidelines |
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| Variable | Range |
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| Inspecting | <p>May Include but not limited to:</p> <ul style="list-style-type: none"> • products packed in a non-liquid medium • product packed in a liquid medium • Liquid medium : water, aqueous solutions of salts, brine, aqueous solutions of food acids, vinegar, aqueous solutions of sugars, aqueous solutions of other sweetening substances, fruit or vegetable juices in the case of fruit or vegetables. |
| Appropriate documentation | <p>may include:</p> <ul style="list-style-type: none"> • reference standards • Certificates of Verification • measuring instrument Certificates of Approval • test procedures for inspecting pre-packaged products and measuring instruments • organizational test reports • organizational procedures e.g. company quality assurance manual • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures material safety data sheets • equipment manuals and warranty, supplier catalogues and handbooks |
| National Test Procedures | <p>may include:</p> <ul style="list-style-type: none"> • measuring instrument test procedures • article measurement procedures • any other test procedure prescribed by the National Measurement Institute |
| Operating environmental impacts | <p>may include:</p> <ul style="list-style-type: none"> • Vibration • wind • heat • dust • electromagnetic interference • out of level • liquid being measured |
| Records | <p>may include:</p> <ul style="list-style-type: none"> • test reports • safety procedures • a history of equipment calibration and test results |
| Calculation | <p>Includes the following but not limited to:</p> <ul style="list-style-type: none"> • Weight • Volume • density • length |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Must Demonstrate knowledge and skills competence to::</p> <ul style="list-style-type: none"> • identify, access and apply test procedures • identify and use suitable reference standards • evaluate and adjust the impact of the operating environment on the performance of the instrument • analyze test results to determine the instrument's suitability for verification (trade use) • identify the scope of a verifier performance audit and assess results with expected outcomes • audit the performance of verifiers of weighing instruments • identify and implement additional inspection strategies for non-instrument related breaches of national measurement legislation • recognize and act on non-compliance • maintain the security and confidentiality of data in accordance with organizational and regulatory requirements • report results in the required formats and expected timeframe. |
| Underpinning knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • general physical principles and concepts including weight, mass, gravity, volume, length, area and displacement • knowledge of the operating procedures across a range of environments including laboratories, retail, manufacturing, industrial, chemical, petroleum, farming, abattoirs and food processing • knowledge of metrological terms and terminology such as maximum permissible errors, traceability, uncertainty, inspection lot, deficiency and shortfall • national measurement legislation applicable to pre-packaged products and measuring instruments • detailed knowledge of National Test Procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➤ purpose of test ➤ test conditions and possible environmental impacts on performance of the instrument • key preparation/measurement steps in test method • calculation steps to give results in appropriate units and precision • maximum permissible errors for weighing instruments under inspection • procedures for completing inspection documentation • organizational policy and procedures for inspecting pre-packaged products • safety principles and procedures relevant to instruments and test environment • basic first aid and site safety induction if required |
| Underpinning skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • accessing, interpreting and applying a range of documents for |

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| | <p>the inspection of weighing instruments including:</p> <ul style="list-style-type: none"> ➤ national measurement legislation ➤ routine National Test Procedures ➤ Certificates of Approval ➤ National Measurement Institute inspection policy ➤ national and international design rules ➤ pattern approval documents ➤ accessing and interpreting Certificates of Verification for a range of reference standards ➤ performing inspections over durations of up to one day in routine environments <ul style="list-style-type: none"> • using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ explain the purpose of inspection ➤ inform traders of non-compliances and consequences of failing to rectify them ➤ access external equipment and resources to complete the inspection ➤ explain inspection procedures and outcomes to traders, verifiers and managers • accessing, transporting, setting up, validating, using and maintaining a range of test equipment and reference standards • identifying and evaluating environmental impacts on performance of a range of weighing instruments • conducting tests and recording results with close attention to detail and accuracy • performing calculations involving: <ul style="list-style-type: none"> ➤ fractions, decimals, ratios, proportions and percentages ➤ scientific notation, correct units and the correct number of significant figures ➤ interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation • analysing performance results over a number of operating conditions • identifying non-compliances with national measurement legislation relating to instrument or verifier performance and initiate appropriate enforcement action including warning, infringement notice, undertaking, injunction and prosecution • identifying potential trading practice non-compliance with national measurement legislation and initiating an appropriate inspection strategy • planning routine tasks • developing/implementing an efficient inspection strategy that has a limited impact on traders, the public, employees and suppliers • demonstrating professionalism and maintaining the rights of the trader at all times |
| Resource Implications | Access is required to real or appropriately simulated situations including work areas; materials and equipment and to information on workplace practices and OHS practices |
| Methods of | Competence may be assessed through: |

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| Assessment | <ul style="list-style-type: none">• Interview / Written Test• Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Perform Verification of Electricity Meters |
| Unit Code | TRD LMS4 05 0215 |
| Unit Descriptor | This Competence Standard Unit covers the evaluation and development of procedures and routines to verify the accuracy, traceability and uncertainty of measurement of metering standards and test equipment. This encompasses developing test procedures, PC controlled and software driven test sequences and includes the evaluation of test equipment capability and design of hardware interfaces. These processes must ensure compliance with Metering Industry Regulations to ensure traceability of all measurement. |

| Elements | Performance Criteria |
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| 1. Plan for the verification and certification of electricity metering instruments | <p>1.1 OHS practices/procedures and environmental and sustainable energy procedures, which may influence verification and certification of electricity metering/energy measurement instruments are reviewed and determined.</p> <p>1.2 Purpose of the verification and certification of electricity metering/energy measurement instruments are established after data is analyzed and expected outcomes of the work are confirmed with the appropriate personnel.</p> <p>1.3 Organizational established procedures, policies and specifications for the verification and certification of electricity metering/energy measurement instruments are obtained or established with the appropriate personnel.</p> <p>1.4 Verification and certification of electricity metering/energy measurement instruments procedures are discussed with/directed to the appropriate personnel in order to ascertain the project brief.</p> <p>1.5 Verification and certification parameters are established from organizational established procedures policies and specifications.</p> <p>1.6 Equipment/tools and personal protective equipment are selected based on specified Performance Criteria and established procedures.</p> <p>1.7 Work roles and tasks are allocated according to requirements and individuals' competencies.</p> <p>1.8 Work is prioritized and sequenced for the most efficient/effective outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures.</p> <p>1.9 Liaison and communication issues with other/authorized personnel, authorities, clients and customers are resolved</p> |

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| | <p>and activities coordinated to carry out work.</p> <p>1.10 Risk control measures are identified, prioritized and evaluated against the work schedule.</p> <p>1.11 Relevant internal/external work permits are obtained to coordinate the performance of work according to requirements and/or established procedures.</p> |
| <p>2. Carry out the verification and certification of electricity metering/energy measurement instruments</p> | <p>2.1 OHS and sustainable energy principles, functionality and practices to prevent the incidents of accidents and minimize waste are incorporated into the project in accordance with requirements and/or established procedures.</p> <p>2.2 Aid, rescue and other related work procedures are performed according to requirements and/or established procedures.</p> <p>2.3 Lifting, climbing, and use of power tools/equipment, techniques and practices are safely exercised according to requirements.</p> <p>2.4 Hazard warnings and safety signs are recognized and hazards and assessed OHS risks are reported to the immediate authorized persons for directions according to established procedures.</p> <p>2.5 Remedial actions are taken to overcome any shortfalls encountered in the work schedule according to requirements and/or established procedures.</p> <p>2.6 Testing equipment is used in accordance with the work schedule and requirements and/or established procedures.</p> <p>2.7 Verification and certification of electricity metering/energy measurement instruments are carried out in accordance with the work schedule.</p> <p>2.8 Technical advice is given regarding potential hazards, safety risks and control measures so that monitoring and preventative action can be undertaken and/or appropriate authorities consulted, where necessary, in accordance with requirements and established procedures.</p> <p>2.9 Essential knowledge and associated skills are applied in the safe verification and certification of electricity metering/energy measurement instruments to ensure completion in an agreed timeframe according to requirements.</p> <p>2.10 Solutions to non-routine problems are identified and auctioned, using essential knowledge and associated skills, according to requirements.</p> <p>2.11 Quality of work is monitored against personal performance agreement and/or established organizational and professional standards.</p> |

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| <p>3. Complete the verification and certification of electricity metering/energy measurement instruments</p> | <p>3.1 Final inspections of the verification and certification of electricity metering/energy measurement instruments are undertaken using routine tests and acceptance tests to ensure they comply with all requirements and include all specifications and documents needed to complete the project.</p> <p>3.2 Appropriate personnel are notified of completion and reports and/or completion documents are finalized/ commissioned according to established procedures and timeframes.</p> <p>3.3 Reports and/or completion documents are submitted to relevant personnel/organizations for approval and, where applicable, statutory or regulatory approval.</p> <p>3.4 Approved copies of routine testing and acceptance testing procedures/activities/results, for the verification and certification of electricity metering/energy measurement instruments, documents are issued and records updated in accordance with established procedures</p> |
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| Electricity meters | <p>May include:</p> <ul style="list-style-type: none"> • Metering Standards and Test equipment (d.c. Circuits ,A.c. circuits, Electromagnetic devices and related circuits, Electrical apparatus ,electrical equipment, Multimeter) • Development and evaluation of procedures • Calculation and application of uncertainty • Evaluation and implementation of procedures and practices to ensure traceability of test equipment to National requirements • Development of test procedures for new hardware and analysis of performance against required outcomes. • Developing PC controlled test sequences that may include the evaluation of test equipment capability and design of hardware interfaces |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> • Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range • Apply sustainable energy principles and practices as specified in the Performance Criteria and range • Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment • Demonstrate an appropriate level of employability skills • Conduct work observing the relevant Anti discrimination legislation, regulations, policies and workplace procedures |

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| | <ul style="list-style-type: none"> • Demonstrated performance across a representative range of contexts (tools/equipment/materials/procedures/workplaces/ other variables) from the prescribed items below: <ul style="list-style-type: none"> ➢ Development and evaluation of procedures and routines to verify and certify the accuracy, traceability and uncertainty of Metering Standards and Test equipment ➢ Evaluation and implementation of procedures and practices to ensure traceability of test equipment to National requirements ➢ Development of test procedures for new hardware and analysis of performance against required outcomes ➢ Evaluation of test equipment capability and design of hardware interfaces ➢ Dealing with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items. |
| Underpinning knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Principles of common calibration techniques • Purpose of Standards and calibration certification • Minimizing error during calibration - source and type of errors, techniques to minimize errors during measurements, calculating the degree of error and calibration factors • Determining the parameters to which the device will be calibrated • Need for normal performance check. • Purpose of calibration documentation |
| Underpinning skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • Measuring fault levels and (earth) fault loop impedance - fault and fault loop impedance measurement techniques embodied in microprocessor based instruments, causes of inaccuracies and overcoming them, test instrument set up and safety procedures, interpreting test readings. • Measuring power, energy, reactive power, power factor and maximum demand - power measurement techniques embodied in microprocessor based instruments, causes of inaccuracies and overcoming them, test instrument set up and safety procedures, interpreting test readings. • Measuring power quality - power measurement techniques embodied in microprocessor based instruments, causes of inaccuracies and overcoming them, test instrument set up and safety procedures, interpreting test readings (power quality measurement includes waveform distortion, harmonics, power factor and transients). |
| Resource Implications | <p>Access is required to real or appropriately simulated situations including work areas; materials and equipment and to information on workplace practices and OHS practices</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |

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| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting |
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| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Perform Standard Calibrations |
| Unit Code | <u>TRD LMS4 06 0215</u> |
| Unit Descriptor | <p>This unit of competency covers the ability to calibrate test and measurement equipment in accordance with standard calibration procedures and documented test methods. These procedures/methods specify all associated reference standards, materials, equipment and methods to be used and the required parameters or quantities and ranges to be tested, including the criteria for rejection or approval.</p> <p>This unit of competency is applicable to laboratory and calibration technicians who carry out tests and/or calibrations using standard calibration methods in first, second and third party laboratories, and laboratories where testing and/or calibration forms part of inspection or product certification. Personnel are not permitted to deviate from explicit instructions in any manner, modify the procedure, nor substitute alternative equipment. They work under limited supervision and results of their work are interpreted and checked by the laboratory supervisor, quality inspector or designated signatory.</p> |

| Elements | Performance Criteria |
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| 1. Prepare items for calibration | <p>1.1. The authorised calibration procedure is selected in accordance with enterprise procedures.</p> <p>1.2. Hazards are identified and appropriate personal protective equipment, safety equipment and procedures used.</p> <p>1.3. All measuring equipment is confirmed to meet the laboratory's specification requirements and complied fully with the calibration procedure</p> <p>1.4. Specified reference standards and associated equipment prior to testing are assembled and set up.</p> <p>1.5. Performance of reference standards and measuring equipment are verified prior to use and adjust or calibrate as necessary.</p> <p>1.6. Potential sources of measurement error are identified and minimised.</p> |
| 2. Perform calibration | <p>2.1. Individual tests are performed without variance according to the documented procedure to ensure repeatability of measurement.</p> <p>2.2. Readings are confirmed the result of a valid measurement and data recorded as required (as-found or before adjustment).</p> <p>2.3. Device under test is adjusted to bring readings within specification and record data (as-left or after adjustment) if</p> |

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| | <p>required.</p> <p>2.4. Resulting test data is analysed to detect trends or inconsistencies that would significantly affect the accuracy or validity of test results.</p> <p>2.5. Appropriate advice is sought when interpretation of results is outside authorised scope of approval.</p> |
| 3. Document results | <p>3.1. Compliance/non-compliance is documented with requirements of test and/or specifications.</p> <p>3.2. Uncertainty of measurement is estimated and documented in accordance with enterprise procedures, if required.</p> <p>3.3. The results of each test/calibration are recorded accurately, unambiguously and objectively.</p> <p>3.4. Confidentiality of enterprise information is ensured.</p> |
| 4. Finalise calibration | <p>4.1. A final report on the job/item detailing testing carried out, traceability, statement of compliance and relevant information are prepared and issued as required</p> <p>4.2. Any non-compliance is reported and next course of action verified with supervisor</p> <p>4.3. Calibration labels, equipment stickers, quality control tags and tamper resistant seals are attached as required in enterprise procedures.</p> <p>4.4. Test equipment/measurement standards and results are stored in accordance with enterprise procedures.</p> |

| Variable | Range |
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| Codes of practice | Where reference is made to industry codes of practice, and/or Ethiopian/international standards, it is expected the latest version will be used |
| Standards, codes, procedures and/or enterprise requirements | <p>may include:</p> <ul style="list-style-type: none"> • Ethiopian and international standards, such as: <ul style="list-style-type: none"> ➤ General requirements for the competence of testing and calibration laboratories ➤ Quality management systems - Requirements ➤ Quality management systems - Guidelines for quality plans ➤ Quality assurance requirements for measurement equipment ➤ Accuracy (trueness and precision) of measurement methods and results ➤ Uncertainty of measurement - Part 3 Guide to the expression of Uncertainty in Measurement (GUM) ➤ Eurachem/CITAC Guide CG4 Quantifying uncertainty in analytical measurement ➤ Material Safety Data Sheets (MSDS) ➤ enterprise recording and reporting procedures and Standard Operating Procedures (SOPs) ➤ quality manuals, equipment and operating/technical |

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| | <ul style="list-style-type: none"> manuals ➤ test methods and calibration procedures (validated and authorised) ➤ test methods and calibration procedures published by international, national or regional standards, reputable technical organisations, scientific texts or journals and equipment manufacturers ➤ incident and accident/injury reports ➤ schematics, work flows, laboratory layouts and production and laboratory schedules |
| Standard calibrations | <p>may include testing and/or calibrating the following equipment and reference materials using standard methods and procedures:</p> <ul style="list-style-type: none"> • test equipment, such as anemometers, balances, barometers, calipers, environmental chambers, hygrometers, manometers, masses, micrometers, pressure equipment, spectrophotometers, tape measures, rules, temperature (digital) indicating systems, thermometers, thermocouples, timing devices, vibration analysis equipment and weighing instruments • electrical reference standards, such as air-lines, analogue meters, attenuators, bridges-manual balance, capacitors, DC voltage references, digital instruments (calibrators, DMMs, electronic transfer standards), inductors, instrument and ratio transformers, instrument transformer test sets, potentiometers, resistors, Radio Frequency (RF) power meters, RF thermistor mounts and thermal converters, shunts, time interval and frequency standards, transfer standards AC-DC, voltage dividers, volt ratio boxes and watt-hour references • working standards, instruments and testing equipment, such as Electromagnetic Compatibility (EMC) test equipment, field strength meters, flammability test equipment, gauges/test fingers/test pins, hipot testers, impact hammers, impulse testers, instrument calibrators, network analysers, signal generators and spectrum and harmonic analysers |
| Hazards | <p>may include:</p> <ul style="list-style-type: none"> • electric shock • disturbance or interruption of services • manual handling of heavy equipment boxes • sources of electromagnetic radiation (lasers and RF generators/transmitters) • fluids under pressure • heat sources, such as ovens |
| Safety procedures | <p>may include:</p> <ul style="list-style-type: none"> • use of personal protective equipment, such as hearing protection, gloves, safety glasses and coveralls • ensuring access to service shut-off points • handling and storing hazardous materials and equipment in accordance with labels, MSDS, manufacturer's instructions, and enterprise procedures and regulations • regular cleaning of equipment and work areas |
| Reference materials | may include: |

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| | <ul style="list-style-type: none"> • colour standards • graded granular materials • hardness blocks |
| Communication | <p>may be with:</p> <ul style="list-style-type: none"> • supervisors and managers (laboratory, quality and customer service) • peers and other laboratory or relevant technical personnel • clients and end users of equipment • external auditors, or accreditation agency for example, NATA • manufacturers of equipment and suppliers of spare parts and materials |
| Working environment | <p>will have a controlled environment but may include:</p> <ul style="list-style-type: none"> • purpose-built designed facility • mobile facility in the field |
| Occupational Health and Safety (OHS) and environmental management requirements | <p>management requirements:</p> <ul style="list-style-type: none"> • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied |

Evidence Guide

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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences to:</p> <ul style="list-style-type: none"> • maintain very close attention to procedures, accuracy and precision of measurement to ensure integrity of test/calibration results (especially during lengthy tests) • critically examine each calibration step to ensure repeatability and validity of data • apply all relevant procedures and regulatory requirements to ensure the quality and integrity of the services or data provided • prepare test/calibration documentation that is accurate and complies with requirements • operate equipment correctly and safely • recognise problems or departures in systems and documentation and initiate actions to prevent or minimise them • recognise and report opportunities for improvements to procedures. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • purpose of metrology and calibration, including common terminology, concepts, principles, procedures, and applications • National Measurements Institute's (NMI) role in the measurement and testing system in Ethiopia • traceability, including legal requirements for traceability • requirements for the competence of testing and calibration laboratories as they affect job role and responsibilities |

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| | <ul style="list-style-type: none"> • hierarchy and appropriate selection of reference materials and instruments • non-conformance/non-compliance procedures and protocols associated with equipment, reference material and calibration procedures • troubleshooting procedures for equipment and test methods • methods for statistical analysis (means, ranges and standard deviations) and estimation of uncertainty of measurement (may include the use of software) • reporting procedures and legislative requirements • handling, transport, storage and operation of reference and working standards • laboratory environmental control requirements • relevant health, safety and environmental requirements • layout of the enterprise, divisions and laboratory • organisational structure of the enterprise • lines of communication • role of laboratory services for the enterprise and customers • Specific calibration fields • Additional knowledge requirements may apply for different calibration fields. For example, testing and calibrations conducted in the following: <ul style="list-style-type: none"> ➤ acoustic and vibration measurement ➤ chemical testing ➤ construction materials testing ➤ electrical testing ➤ heat and temperature measurement ➤ mechanical testing ➤ metrology ➤ non-destructive testing ➤ optics and radiometry ➤ pressure measurements |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • selecting and applying appropriate test methods and calibration procedures • maintaining close attention to procedures, accuracy and precision of measurement to ensure the integrity of test/calibration results • using calibration and correction charts • calculating to give results in appropriate accuracy, precision and units • preparing test/calibration documentation that is accurate and complies with requirements • operating equipment correctly and safely • recognising problems or departures in systems and documentation and initiating actions to prevent or minimise them • recognising and report opportunities for improvements to procedures |
| Resources | Access is required to real or appropriately simulated situations, |

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| Implication | including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Use and Maintain Reference Standards in the Laboratory |
| Unit Code | <u>TRD LMS4 07 0215</u> |
| Unit Descriptor | This unit of competence covers the ability to select and use appropriate reference standards of measurement in accordance with standard procedures and industry best practice. It also involves storing and transporting reference standards correctly and maintaining their integrity during all trade measurement activities. |

| Elements | Performance Criteria |
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| 1. Maintain reference standard integrity | <p>1.1 Environmental issues that may impact on reference standard integrity are identified and appropriate control strategies implemented.</p> <p>1.2. Reference standards are stored, transported and handled in accordance with organizational procedures and industry best practice</p> <p>1.3. Damaged or compromised reference standards are quarantined and reported in accordance with organizational procedures.</p> <p>1.4. Reference standard maintenance and calibration are planned and organized in accordance with legislative requirements and organizational procedures (keep traceability with national metrology Institute).</p> <p>1.5. Maintenance and calibration records are updated in accordance with organizational procedures.</p> <p>1.6. Ensure that personnel assisting with the activity used correct handling procedures for reference standards.</p> |
| 2. Select appropriate reference standards | <p>2.1 The scope and expected outcomes of the planned activity are identified.</p> <p>2.2. Reference standards appropriate to the activity are identified and accessed.</p> <p>2.3. Reference standard limitations associated with the activity and operating environment are evaluated.</p> <p>2.4. Reference standard suitability is validated against the activity scope and expected outcomes in accordance with legislative requirements and organizational policy and procedures.</p> |
| 3. Use reference standards | <p>3.1. The expected outcomes are reviewed for the activity.</p> <p>3.2. Reference standard Certificates of Verification and measurement reports are accessed and interpreted.</p> <p>3.3. The reference standard is conditioned as required to produce consistent and accurate measurements.</p> |

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| | <p>3.4. Reference standard corrections are identified, interpreted and applied as required.</p> <p>3.5. The results of the activity are assessed against the prescribed performance criteria.</p> <p>3.6. Any variances are analyzed from the expected outcomes to identify any isolated or systemic problems linked to the reference standard or its use.</p> |
| 4. Maintain a safe work environment | <p>4.1 Established safe work practices and personal protective equipment are used to ensure personal safety and that of other personnel.</p> <p>4.2. Relevant local workplace, health and safety issues are identified and appropriate control strategies implemented.</p> <p>4.3. Reference standards are handled safely in accordance with applicable legislation and organizational procedures.</p> |

| Variable | Range |
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| Standards and Measuring Instruments | <ul style="list-style-type: none"> • Appropriate documentation: (reference standard Certificates of Verification , test procedures for inspecting measuring instruments, pre-packaged products and trading practices, organizational test reports, organizational procedures e.g. company quality assurance manual, National Measurement Act, Occupational Health and Safety (OHS) regulations, guidelines and procedures material data safety sheets, equipment manuals and warranty, supplier catalogues and handbooks) • Legislation: (national measurement legislation) • National Measurement Institute policy: (storage and maintenance, procedures for reference standards, bulletin, instruction, determination, policy documents) • National Test Procedures: (measuring instrument test procedures, article measurement procedures, or any other test procedure prescribed by the National Measurement Institute) • OHS and environmental management requirements • Operating environmental impacts:(vibration, wind, heat, dust, liquid being measured) • Records: (test reports , safety procedures , a history of equipment calibration and test results) |
| Calculation | and application of uncertainty measurements to meet the requirements of the “ISO Guide to Estimation of Measurement Uncertainty” |

Evidence Guide

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| Critical aspects of competence | <p>Must demonstrate knowledge and skills competence to:</p> <ul style="list-style-type: none"> • identify, access and apply relevant test procedures • select and use suitable reference standards • maintain the integrity of reference standards during their transport, storage and use • Traceability to national metrology Institute is kept • determine whether reference standards are defective • validate the suitability of reference standards for activities relevant to job role • maintain the security and confidentiality of data in accordance with organizational and regulatory requirements • report results in the required formats and expected timeframe. |
| Underpinning knowledge | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • general physical principles and concepts including weight, mass, gravity, density, volume, length and area • Ethiopian legal units of measurement • hierarchy of reference standards in relation to legal metrology • purpose of Certificates of Verification issued under the national measurement legislation • metrological terms such as: maximum permissible errors, maximum permissible variations, traceability, uncertainty • information in graphs and tables within Certificates • application of different classes of reference standards used to inspect/verify trade measurement instruments • transport/storage specifications and procedures for test/specialized equipment and reference standards • variations from transport/storage specifications and procedures requiring appropriate approval • maintenance and calibration procedures for reference standards • maintenance required for test equipment when manufacturer's requirements are unavailable • actions to be taken where legal traceability cannot be confirmed • actions to be taken if reference standards and test equipment are found to be defective • procedures for recording and reporting faults • maintenance requirements for reference standards and test equipment • knowledge of the operating procedures across a range of environments such as laboratories, retail, commercial, office, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs • detailed knowledge of National Test Procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➤ purpose of test ➤ test conditions and possible environmental impacts on performance of the instrument |

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| | <ul style="list-style-type: none"> ➤ key preparation/measurement steps in test method ➤ calculation steps to give results in appropriate units and precision ➤ maximum permissible errors for instruments under test ➤ workplace, health and safety requirements relating to personnel, reference standards, measuring instruments and test equipment ➤ basic first aid and site safety induction if required |
| Underpinning skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • using correct documentation to obtain information about tolerances for reference standards • identifying suitable reference standards for the planned activity • accessing documented operating procedures for reference standards and test equipment • using reference standards and test equipment in accordance with specified procedures • Keeping traceability/maintaining reference standards • identifying and recording/reporting malfunction of, or damage to, reference standards or test equipment • interpreting Certificates of Verification in relation to the use of reference standards • using graphs and tables within Certificates of Verification • using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ explain the purpose of the trade measurement activity ➤ access external equipment and resources to complete the activity ➤ explain procedures and expected outcomes of the activity to traders and managers • accessing, transporting, setting up, validating, using and maintaining a range of test equipment and reference standards • identifying and evaluating environmental impacts on a wide range of reference standards • performing calculations involving: <ul style="list-style-type: none"> • fractions, decimals, ratios, proportions and percentages • scientific notation, correct units and the correct number of significant figures • interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation • organizing large reference standards to be dispatched ahead of visit to trader's premises • planning routine tasks • demonstrating professionalism and maintaining the rights of the trader at all times • solving routine/expected problems • working safely which may include applying basic first aid, confined space entry and working with heavy machinery |
| Resource Implications | Access is required to real or appropriately simulated situations including work areas; materials and equipment and to information |

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| | on workplace practices and OHS practices |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Apply Software Application to Verification Equipment |
| Unit Code | TRD LMS4 08 0215 |
| Unit Descriptor | This unit describes the performance outcomes, skills and knowledge required to correctly select and use a variety of high-end software applications to efficiently produce a standard job. |

| Element | Performance Criteria |
|-------------------------------|--|
| 1. Select and assess software | <p>1.1. Printing requirements of the layout brief are determined to align with digital production processes and printing feasibility.</p> <p>1.2. Range of software applications is selected according to job specifications.</p> <p>1.3. Appropriate software applications are used to complete components of the job according to manufacturer's specifications and enterprise standards.</p> |
| 2. Arrange elements on page | <p>2.1. Client copy and images are assembled to confirm to the design brief.</p> <p>2.2. Text is prepared and required fonts and font size is applied.</p> <p>2.3. Basic elements and images are created and arranged on the page to confirm to the design brief.</p> <p>2.4. Image resolution and color mode are determined according to job specifications, help function is accessed, if required, and solution to queries found.</p> <p>2.5. Document set-up is completed to conform to the design brief and job specifications.</p> |
| 3. Check quality | <p>3.1. Text is reviewed for possible errors and omissions, and errors are discussed with client or supervisor.</p> <p>3.2. Arrangement of the basic elements are arranged to adhere with design principles.</p> <p>3.3. Hard copy proof is printed and rechecked for errors, omissions and overall design of the layout.</p> <p>3.4. Necessary changes are made and reviewed and re-proofed as required.</p> <p>3.5. The job is saved according to enterprise procedures.</p> |
| 4. Use RIP to output job/CTP | <p>4.1. The layout is imported into a raster image processor (RIP) or front-end processor according to workplace procedures</p> <p>4.2. The image is imported in to a CTP (computer to press) according to the work procedure.</p> <p>4.3. The layout is printed according to job specifications and enterprise standards.</p> |

| Variable | Range |
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| Software applications | <p>may include:</p> <ul style="list-style-type: none"> • Adobe In design • Illustrator • Photoshop • QuarkXPress • Corel • RIPs and front-end processors • New software applications and new versions of existing products entering the market regularly. |
| Basic elements | <p>may include:</p> <ul style="list-style-type: none"> • simple filled or unfilled boxes • frames • Rules (lines) or bullets used as accents or to divide a page into sections. |
| Document set-up | <p>may include:</p> <ul style="list-style-type: none"> • Layout • margins • page size • page orientation • number of pages • Arrangement of pages. |
| Enterprise procedures | <p>may include:</p> <ul style="list-style-type: none"> • various filing methods and techniques including: <ul style="list-style-type: none"> ➢ network drives ➢ DVDs and archiving systems. |
| Raster Image Processor (RIP) or front-end processor | <p>may include:</p> <ul style="list-style-type: none"> • computerised monitoring and data entry device used to enter: <ul style="list-style-type: none"> ➢ machine settings ➢ job specification settings ➢ Monitor machine status and perform machine productivity enhancements. |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> • use a variety of software applications to first produce a layout, then a printed product according to job specifications • find and use information relevant to the task from a variety of information sources • use at least two software applications to prepare and print two different sets of layouts according to enterprise standards. |
| Underpinning Knowledge and Attitudes | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • different printing processes used in digital production • colour modes and how they affect output • how image resolution is governed by output resolution and/or viewing distance • various software applications and their usages in relation to digital production • how the job specifications determine typeface selection |

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| | <ul style="list-style-type: none"> • effect typefaces have on readability • design principles, such as hierarchy, emphasis, contrast, alignment, repetition and flow • how to select and manipulate type within a layout application • image manipulation techniques including basic colour correction • how to create basic vector shapes with an application • different colour modes and their uses • pre flighting procedures • the various ways to import a job into a RIP • location of manuals, safety and other documentation that are relevant to high-end software applications for digital production |
| Underpinning Skills | <p>Demonstrates skills in:</p> <ul style="list-style-type: none"> • Occupational Health and Safety (OHS) skills for using correct ergonomics when operating the computer • communication skills for gaining client agreement on design layout • collecting, analysing and organising skills for storing and retrieving all required electronic files • planning and organising skills for outputting a proof and gaining approval by the client • teamwork skills for maintaining the production process in association with others • numeracy skills for expressing ideas and techniques by determining image resolution • problem-solving skills for checking and fixing errors when refighting • technical skills for selecting relevant hardware and software to produce a layout |
| Resource Implications | Access is required to real or appropriately simulated situations including work areas; materials and equipment and to information on workplace practices and OHS practices |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting |

| Occupational Standard: Legal Metrology Service Level IV | |
|---|---|
| Unit Title | Read and Interpret Basic Drawing and Specifications |
| Unit Code | TRD LMS4 09 0215 |
| Unit Descriptor | This unit of competency covers the competence specifies the outcomes required to read and interpret technical drawing and specifications relevant to install working standard and measuring instrument. It includes the identification of types of drawings and their functions, the recognition of commonly used symbols and abbreviations, the identification of key features and specifications on equipment, the comprehension of written job specifications and the recognition of document status and amendment detail. |

| Elements | Performance Criteria |
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| 1. Identify types of drawings and their functions. | <p>1.1 Main types of plans and drawings used in the trade measurement sector of the industry are identified.</p> <p>1.2 Key features and functions of each type of drawing are identified.</p> <p>1.3 Quality requirements of company operations are recognized and adhered.</p> <p>1.4 Environmental requirements and controls are identified from job plans, specifications and environmental plan.</p> |
| 2. Recognise amendments | <p>2.1 Title panel of project documentation is checked to verify latest amendments to drawing.</p> <p>2.2 Legend is located on project drawings, and symbols and abbreviations are correctly interpreted.</p> <p>2.3 Amendments to specifications are checked to ensure currency of information and conveyed to others where appropriate.</p> |
| 3. Recognise commonly used symbols and abbreviations. | <p>3.1 Drawing symbols and abbreviations are recognised.</p> <p>3.2 Legend is located on project drawings, and symbols and abbreviations are correctly interpreted.</p> |

| Variable | Range |
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| Plans and drawings | <p>May Include the following but not limited to:</p> <ul style="list-style-type: none"> • Measuring equipment designs • cross-sectional plans • dimensions and notes • illustrations • longitudinal plans • project specifications • site plans • structural detail and specification providing illustrations and |

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| | dimensions |
| Key features | May include the following but not limited to: <ul style="list-style-type: none"> • characteristics • product compatibility • pattern dimension • quantities • sizes • texture |
| Quality requirements | include relevant regulations, including: <ul style="list-style-type: none"> • internal company quality policy and standards • manufacturer specifications, where specified • workplace operations and procedures |
| Specifications | Include: <ul style="list-style-type: none"> • detail relating to materials and quality of work, quality assurance, nominated subcontractors, and provision of site access/facilities |
| Information | Includes: <ul style="list-style-type: none"> • diagrams or sketches and graphics • instructions issued by authorized organizational or external personnel • manufacturer specifications and instructions |

Evidence Guide

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| Critical Aspects of Competency | Must demonstrate knowledge and skills competence: <ul style="list-style-type: none"> • locate, interpret and apply relevant information, standards and specifications • comply with site safety plan, OHS regulations and legislation applicable to workplace operations |
| Underpinning Knowledge | Must demonstrate knowledge of: <ul style="list-style-type: none"> • basic calculations of heights, areas, volumes and grades • commonly used construction symbols and abbreviations • construction terminology • drawing conventions • features of plans and elevations, including direction, scale, key, contours, symbols and abbreviations • job safety analysis (JSA) and safe work method statements • key features of formal job specifications • processes for application of scales in plan preparation and interpretation • project quality requirements • site and equipment OHS requirements • techniques for orienting/confirming the orientation of a plan |
| Underpinning Skills | Demonstrate skills of: <ul style="list-style-type: none"> • communication skills to: <ul style="list-style-type: none"> ➢ enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand ➢ read and interpret: ➢ documentation from a variety of sources |

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| | <ul style="list-style-type: none"> ➤ drawings and specifications ➤ use language and concepts appropriate to cultural differences ➤ use and interpret non-verbal communication, such as hand signals ➤ identify and accurately report to appropriate personnel any faults in tools, equipment or materials • numeracy skills to apply measurements and make calculations, including heights, areas, volumes and grades • organisational skills, including the ability to plan and set out work • teamwork skills to work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the onsite or in-house work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
|---|---|
| Unit Title | Collect Analyze and Present Data and Information |
| Unit Code | TRD LMS4 10 0215 |
| Unit Descriptor | This unit involves the skills and knowledge required to collect, analyze and present workplace data and information including identifying required information, analyzing and preparing information for use, explaining information, and presenting workplace information to others. Data collection, analysis and presentation are carried out as an integral part of operations in the context of the workplace concerned. Work is performed under general or limited Services, generally within a team environment. It involves the application of established principles and practice to the collection, analysis and presentation of information and data as part of workplace operations. |

| Elements | Performance Criteria |
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| 1. Identify required information | 1.1 Purpose of the information/data collection is identified. 1.2 Sources of information are established. 1.3 Appropriate information is collected. |
| 2. Prepare information for use | 2.1 Information is collected and analysed in accordance with workplace procedures . 2.2 Processed information is organised and presented in a logical manner. 2.3 Checks are made for accuracy. |
| 3. Explain information | 3.1 Data collection and analysis are explained to others in a way that effectively contributes to the workplace operations. 3.2 Outcomes of data/information analysis are presented to others using appropriate presentation modes and resources. 3.3 Questions are answered and appropriate clarifications given. |
| 4. Present workplace information | 4.1 Processed information is forwarded to appropriate personnel in accordance with workplace procedures. 4.2 Processed information is collated and stored in accordance with workplace procedures. |

| Variable | Range |
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| Information/docu mentation | may include: <ul style="list-style-type: none"> • workplace procedures, checklists and instructions • operations manuals • induction documentation • competence standards and training materials • job specifications • manufacturers specifications • HAZCHEM and dangerous/hazardous goods codes • goods identification numbers and codes • manifests, bar codes, goods and container identification • manufacturers specifications • workplace policies • supplier and/or client instructions • material safety data sheets • relevant codes of practice including the national standards for manual handling and the industry safety code • legislation, regulations and related documentation • award, enterprise bargaining agreement, other industrial arrangements • standards and certification requirements • quality assurance procedures • emergency procedures |
| Data collection | will be: <ul style="list-style-type: none"> • that required for workplace operations • may occur by day or night and in a variety of work contexts |
| Workplace procedures | may include: <ul style="list-style-type: none"> • company procedures • enterprise procedures • organisational procedures • established procedures |
| Presentation modes | may include: <ul style="list-style-type: none"> • written documentation • oral reports • group presentations using appropriate technology • completion of standard forms and checklists • routine written reporting • entry of collected/processed information into a computer • participation in workplace discussions |
| Customers | may be: <ul style="list-style-type: none"> • internal or external |
| Presentation/co mmunication problems | may include: <ul style="list-style-type: none"> • misunderstanding • limited ability of others to communicate in English • noisy environments or communications channels • illegible writing or print • use of non-standard vocabulary • incorrect assumption that information has been received and/or correctly understood |

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| Depending on workplace context, consultative processes | <p>may involve:</p> <ul style="list-style-type: none"> managers supervisors/team leaders workplace personnel clients private and/or public sector security personnel police security consultants visitors contractors official representatives union representatives industrial relations OHS specialists other professional or technical staff |
| Presentation/communication | <p>may involve the use of a range of technology, including:</p> <ul style="list-style-type: none"> phone electronic data interchange fax email internet radio overhead or computer controlled projector plain or electronic white board flip charts microphone and amplifier video player and monitor |
| Applicable regulations and legislation | <p>may include:</p> <ul style="list-style-type: none"> relevant regulations, standards and codes of practice, including the national standards for manual handling and industry safety codes dangerous goods and freight regulations and codes relevant standards and certification requirements relevant Ethiopian and state/territory OHS legislation equal employment legislation and related policies environmental protection regulations |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Must demonstrate knowledge and skills competence to:</p> <ul style="list-style-type: none"> the underpinning knowledge and skills relevant legislation and workplace procedures other relevant aspects of the range statement |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> Relevant procedures and duty of care requirements Relevant OHS responsibilities Sources of information and data and procedures for processing the information for workplace use Protocols and procedures for the collection, analysis and presentation of workplace information and data using relevant technology |

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| | <ul style="list-style-type: none"> • Presentation and communication techniques including an understanding of barriers to effective communication and how to overcome them • Basic principles of effective presentation and communication of information • Techniques for communicating effectively with a multilingual persons or persons with a limited ability • Typical presentation and communication problems and appropriate action and solutions |
| Underpinning Skills | <p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • Communicate effectively with others when collecting, analysing and presenting workplace data and information • Read and interpret instructions and procedures relevant to the collection, analysis and presentation of workplace data and information • Interpret and follow operational instructions and prioritise work • Complete documentation related to the collection, analysis and presentation of workplace data and information • Identify and use required communication and presentation technology • Work collaboratively with others when collecting, analysing and presenting workplace data and information • Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others • Promptly report and/or rectify any identified problems that may arise when collecting, analysing and presenting workplace data and information in accordance with regulatory requirements and workplace procedures • Plan own work including predicting consequences and identifying improvements • Implement contingency plans for unanticipated situations that may arise when collecting, analysing and presenting workplace data and information • Monitor work activities in terms of planned schedule • Modify activities depending on differing operational contingencies, risk situations and environments • Work systematically with required attention to detail • Operate and adapt to differences in equipment in accordance with standard operating procedures |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Inspect a Range of Trading Practices |
| Unit Code | TRD LMS4 11 0215 |
| Unit Descriptor | <p>This unit of competency covers the inspection of trading practices and application of National Test Procedures to determine whether the method of advertising, selling and measuring an article complies with national measurement legislation.</p> <p>This unit of competency is applicable to trade measurement inspectors appointed under national measurement legislation who may inspect a wide range of trading practices as part of their allocated duties. Compliance with national legislation governing trading practices applies to the measurement and transactions of all products sold by reference to measurement in all industry sectors.</p> |

| Elements | Performance Criteria |
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| 1. Prepare for inspection | <p>1.1 The type of trading practices to be inspected is identified and evaluated.</p> <p>1.2 Any history of previous inspections at trader's premises is accessed and reviewed.</p> <p>1.3 Appropriate documentation required for the inspection is accessed and correctly interpreted.</p> <p>1.4 Test equipment, investigation equipment and consumables required for the inspection are identified and accessed.</p> <p>1.5 Specified test equipment is ensured to fit for purpose in accordance with applicable legislation and organizational procedures.</p> <p>1.6 Test equipment is stored and transported in accordance with organizational procedures and industry best practice.</p> <p>1.7 Workplace health and safety issues relevant to the inspection are identified.</p> |
| 2. Conduct a trial purchase | <p>2.1 Visible trading practices are observed and assessed prior to entry into the premises.</p> <p>2.2 Scope and expected outcomes of the trial purchase are identified.</p> <p>2.3 On entry to the premises, trading practices are evaluated and where applicable modified trial purchase strategy to maximise inspection outcomes.</p> <p>2.4 Trial purchase is conducted while observing the measurement process and staff actions.</p> <p>2.5 Trader's performance is assessed against expected outcomes.</p> <p>2.6 Any variances are analysed from the expected outcomes and</p> |

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| | isolated or systemic issues related to the trial purchase identified. |
| 3. Initiate inspection | <p>3.1 The site controller is identified, the purpose of the inspection explained and formal identification produced, if required.</p> <p>3.2 Site workplace health and safety issues are identified and appropriate control strategies implemented.</p> <p>3.3 A preliminary evaluation of the site's trade measurement activities is conducted and inspection prioritised to maximise outcomes.</p> <p>3.4 Measuring instruments being used for trade are identified.</p> <p>3.5 Site's trading practice activities are identified and inspection is planned to minimise disruption to the public and trader.</p> |
| 4. Examine measurement related advertising for compliance | <p>4.1 The articles which are required to be sold by specific measurement or in terms of a measurement at base conditions are identified.</p> <p>4.2 Measurement related advertising used by the trader is inspected and evaluated.</p> <p>4.3 Any non-compliances are identified with legislative requirements/</p> |
| 5. Examine trade measuring instrument operation | <p>5.1 Measuring instrument operating environment is inspected and instrument suitability for purpose determined.</p> <p>5.2 Measuring instrument operation is evaluated against legislative requirements, organizational policy and procedures.</p> <p>5.3 The operating environment is modified or alternative arrangements are implemented to ensure reliable test conditions, as necessary.</p> <p>5.4 The maximum permissible errors for the instrument are identified from the legislative requirements.</p> <p>5.5 Test equipment is used safely in accordance with applicable legislation and organizational procedures.</p> <p>5.6 Instrument is checked for compliance with the appropriate Certificates of Approval.</p> <p>5.7 The instrument is inspected in accordance with relevant National Test Procedure and appropriate National Measurement Institute policy.</p> <p>5.8 Results are evaluated against prescribed performance criteria and determined if the instrument is suitable for trade use in accordance with legislative requirements.</p> |
| 6. Validate the measurement of articles | <p>6.1 Articles sold by reference are identified to measurement.</p> <p>6.2 The process used by the trader is examined for measuring an article.</p> <p>6.3 The trader's measurement procedure is evaluated.</p> |

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| | 6.4 An article is measured in accordance with the appropriate National Test Procedure, organisational policy and procedures. |
| 7. Analyse and report inspection results | <p>7.1 Inspection data is analyzed for unacceptable trends.</p> <p>7.2 Test reports are used to present inspection results in the required format.</p> <p>7.3 Inspection documentation is completed in accordance with legislative requirements and organisational procedures.</p> <p>7.4 Inspection results are communicated within the specified time and in accordance with organisational guidelines.</p> <p>7.5 Follow-up actions and follow-up actions are recommended as appropriate.</p> |
| 8. Act on non-compliance | <p>8.1 Evidence of any identified non-compliance is recorded and collected in accordance with legislative requirements, organisational policy and procedures.</p> <p>8.2 Applicable enforcement action for the non-compliance is selected in accordance with legislative requirements, organisational policy and procedures.</p> <p>8.3 Trader is informed of non-compliances and the consequences of failing to have them corrected.</p> <p>8.4 Enforcement action is implemented in accordance with legislative requirements, organisational policy and procedures.</p> <p>8.5 The rights of the trader are maintained at all times.</p> |

| Variable | Range |
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| Trading practices | <p>may include:</p> <ul style="list-style-type: none"> • how a measuring instrument is used • position of measuring instruments • measurement advertising • how the measurement of an article is determined • the type of measurement used to sell an article • the base conditions at which the measurement of an article is determined |
| Appropriate documentation | <p>may include:</p> <ul style="list-style-type: none"> • reference standards • Certificates of Verification • measuring instrument Certificates of Approval • test procedures for measuring instruments • organisational test reports • organisational procedures e.g. company quality assurance manual • National Measurement Act |

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| | <ul style="list-style-type: none"> Occupational Health and Safety (OHS) regulations, guidelines and procedures material safety data sheets equipment manuals and warranty, supplier catalogues and handbooks |
| Legislation | <p>may include:</p> <ul style="list-style-type: none"> national measurement legislation applicable OHS legislation |
| Test equipment | <p>may include:</p> <ul style="list-style-type: none"> reference standards of measurement weighing instruments trolleys cameras video and audio recorders |
| Certificates of Approval | <p>may include:</p> <ul style="list-style-type: none"> any Certificate issued by the National Measurement Regulations approving the pattern of a limited weighing instrument as being suitable for trade |
| National Test Procedures | <p>may include:</p> <ul style="list-style-type: none"> measuring instrument test procedures article measurement procedures any other test procedure prescribed by the National Measurement Institute |
| National Measurement Institute policy | <p>may include:</p> <ul style="list-style-type: none"> test procedure variations between a verification, in-service or audit inspection bulletin instruction determination policy documents |
| Enforcement action | <p>may include:</p> <ul style="list-style-type: none"> formal warnings infringement notice formal undertaking injunction prosecution |
| OHS and environmental management requirements | <p>refer to:</p> <ul style="list-style-type: none"> all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through Federal legislation. These requirements must not be compromised at any time all operations assume the potentially hazardous nature of samples and require standard precautions to be applied |
| Operating environmental impacts | <p>may include:</p> <ul style="list-style-type: none"> vibration wind heat dust electromagnetic interference |

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| | <ul style="list-style-type: none"> • out of level • liquid being measured |
| Records | <p>may include:</p> <ul style="list-style-type: none"> • test reports • safety procedures • a history of equipment calibration and test results |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Must demonstrate skills and knowledge competences to:</p> <ul style="list-style-type: none"> • identify, access and apply test procedures • identify and use suitable reference standards • evaluate and adjust the impact of the operating environment on the performance of the instrument • analyse test results to determine the instrument's suitability for verification (trade use) • identify and implement additional inspection strategies for non-trading practice related breaches of national measurement legislation • recognise and act on non-compliance • maintain the security and confidentiality of data in accordance with organisational and regulatory requirements • report results in the required formats and expected timeframe. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • general physical principles and concepts including weight, mass, gravity, volume, length and area • knowledge of the operating procedures across a range of retail environments and some industrial and petroleum environments • knowledge of metrological terms and terminology such as maximum permissible errors, traceability and uncertainty • national measurement legislation applicable to trading practices and measuring instruments • detailed knowledge of National Test Procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➢ purpose of test ➢ test conditions and possible environmental impacts on performance of the instrument • key preparation/measurement steps in test method • calculation steps to give results in appropriate units and precision • maximum permissible errors for measuring instruments under inspection • procedures for completing inspection documentation • organisational policy and procedures for inspecting trading practices • safety principles and procedures relevant to instruments and |

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| | <p>test environment</p> <ul style="list-style-type: none"> • basic first aid and site safety induction if required |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • accessing, interpreting and applying a range of documents for the inspection of trading practices including: <ul style="list-style-type: none"> ➤ national measurement legislation ➤ National Test Procedures ➤ National Measurement Institute inspection policy ➤ accessing and interpreting Certificates of Verification for a range of reference standards ➤ performing inspections over a wide range of environments • using advanced communication and negotiation skills to: • explain the purpose of inspection • inform traders of non-compliances and consequences of failing to rectify them • access external equipment and resources to complete the inspection • explain inspection procedures and outcomes to traders and managers • accessing, transporting, setting up, validating, using and maintaining a range of test equipment and reference standards • identifying and evaluating environmental impacts on performance of a range of measuring instruments • identifying and evaluating impacts of trader procedures on the measurement of articles • conducting tests and recording results with close attention to detail and accuracy • performing calculations involving: <ul style="list-style-type: none"> ➤ fractions, decimals, ratios, proportions and percentages ➤ scientific notation, correct units and the correct number of significant figures ➤ interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation ➤ identifying non-compliances with national measurement legislation relating to trading practices and initiate appropriate enforcement action including warning, infringement notice, undertaking, injunction and prosecution ➤ identifying potential measuring instrument non-compliance with national measurement legislation and initiating an appropriate inspection strategy ➤ planning routine tasks ➤ developing/implementing an efficient inspection strategy that has a limited impact on traders, the public, employees and suppliers • demonstrating professionalism and maintaining the rights of the trader at all times • solving routine/expected problems • working safely which may include applying basic first aid |

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| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Exercise Regulatory Powers |
| Unit Code | TRD LMS4 12 0215 |
| Unit Descriptor | This unit covers the exercise of powers under the organization's enabling legislation, and other relevant legislation for regulation, monitoring, inspection and investigation. It includes establishing regulatory powers, applying enabling legislation, utilizing other legislation and standards, and working with other organizations. In practice, exercising regulatory powers occurs in the context of other specialist and generalist public sector work activities such as acting ethically, promoting client compliance, assessing compliance, conducting investigations, making arrests, conducting search and seizure, interviewing, gathering evidence, etc. |

| Elements | Performance Criteria |
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| 1. Establish regulatory powers | <p>1.1 Current information relating to enabling legislation and regulations is accessed and used to maintain up-to-date knowledge of requirements.</p> <p>1.2 Powers provided under the legislation and the boundaries of those powers are confirmed.</p> <p>1.3 Compliance requirements of the legislation, related regulations, standards, codes of practice and policy are identified and confirmed.</p> <p>1.4 Acts and omissions that comprise non-compliance/offences under the legislation are identified and confirmed.</p> |
| 2. Apply enabling legislation | <p>2.1 Circumstances where regulatory powers will be exercised are identified and analysed to determine response/s or measures to apply, in accordance with the legislation and organisational policy and procedures.</p> <p>2.2 Circumstances requiring the exercise of regulatory powers that are outside own limits are identified and referral to others is made in accordance with organisational policy and procedures.</p> <p>2.3 Risks associated with the exercise of regulatory powers are identified and strategies to manage risks are identified in accordance with the organisation's risk management strategy.</p> <p>2.4 Enabling legislation is applied consistent with the boundaries and powers contained therein and organisational policy and procedures.</p> |
| 3. Utilise other legislation and standards | <p>3.1 Other legislation and standards which impact on powers are identified and their requirements confirmed.</p> <p>3.2 Apparently conflicting legislative directions are resolved or</p> |

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| | referred in accordance with organisational policy and procedures. |
| 4. Work with other organisations | <p>4.1 Organisations that have jurisdictions which may overlap are identified and relationships are established and maintained in accordance with organisational policy and procedures.</p> <p>4.2 Organisations available to provide assistance and advice or take referrals are identified and relationships are established for mutual benefit.</p> <p>4.3 Organisational protocols and procedures are followed when working with other organisations.</p> <p>4.4 Compliance matters are referred to other organisations for action when required in accordance with organisational policy and procedures.</p> <p>4.5 Lead agency protocols/lines of authority are followed during operations involving more than one organisation.</p> |

| Variable | Range |
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| Legislation | <p>related to:</p> <ul style="list-style-type: none"> • public sector management, financial management • auditor general • audit, customs and excise, quarantine, fisheries, agriculture, land management, conservation, coastal management, environmental protection, environment, insurance, legal administration (sheriffs, young offenders), workers compensation, occupational safety and health, workplace relations • planning, construction, transport, energy, mining, resource management, communications • education and children's services, employment, vocational education and training, equal employment opportunity and anti-discrimination |
| Responses or measures | <p>may include:</p> <ul style="list-style-type: none"> • audit • caution • clearance • community protection • control • encouragement to comply • entry • impoundment • initiation of proceedings that may lead to prosecution • inspection • investigation • issue of notices • on-the-spot fines • possession |

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| | <ul style="list-style-type: none"> • referral to another agency/jurisdiction • search • seizure • surveillance • warning |
| Risks | <p>may result from:</p> <ul style="list-style-type: none"> • workplace hazards • environmental hazards • equipment failure • people engaged in illegal activities • movement into and out of Ethiopia of: <ul style="list-style-type: none"> ➢ aircraft ➢ cargo ➢ people ➢ postal articles ➢ vessels • client cultural background • client literacy levels |
| Other legislation | <p>may include:</p> <ul style="list-style-type: none"> • aspects of common law • aspects of Crimes and Criminal Code Act • contract law • administrative law • industrial relations law • financial management Acts • public service Acts |
| Standards | <p>may include:</p> <ul style="list-style-type: none"> • public sector standards • government security standards • fraud control standards |
| Relationships | <p>may include:</p> <ul style="list-style-type: none"> • informal • formal • Memoranda Of Understanding (MOUs) |
| Other organizations | <p>may include:</p> <ul style="list-style-type: none"> • administrative appeals tribunals • emergency services • federal police • fire and rescue • industrial inspectors • Local Government law enforcement officers • legal advisers • military police • security services |

Evidence Guide

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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences that confirms:</p> <ul style="list-style-type: none"> • the knowledge requirements of this unit |
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| | <ul style="list-style-type: none"> • the skill requirements of this unit • the exercise of regulatory powers in a range of (3 or more) contexts (or occasions, over time) |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge and understanding of:</p> <ul style="list-style-type: none"> • full range of regulatory powers and the limits to those powers • enabling legislation • offences under the legislation • aspects of criminal law, administrative law, industrial law, contract law • statutory time limits • applicable standards • terminology used in legislation and procedures • organisational policies, guidelines and regulations • equity and diversity principles • public sector legislation such as occupational health and safety and environment relating to the exercise of regulatory powers |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • undertaking research and analysis • using information technology to access relevant legislation and procedures • reading complex written materials such as legislation, regulations, codes of practice and legal precedents and applying them to work practices • using scanning techniques to locate main ideas in legislation, guidelines and policy documents • engaging in discussion involving exchanges of often complex oral information • communicating with a range of people from diverse backgrounds • responding to diversity, including gender and disability • choosing regulatory responses/measures to fit the circumstances and justifying those responses against legislation, guidelines, policy and regulations • networking, building relationships and working with others • applying occupational health and safety and environment procedures relating to the exercise of regulatory powers |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Assess Compliance |
| Unit Code | TRD LMS4 13 0215 |
| Unit Descriptor | <p>This unit covers risk assessment, monitoring of situations/environments/behaviours, and analysis of information to assess compliance with legislation and/or standards. It includes monitoring areas under own jurisdiction, receiving or identifying allegations of non-compliance, and conducting research to determine levels of compliance.</p> <p>In practice, assessing compliance may overlap with other generalist or specialist public sector work activities such as acting ethically, exercising regulatory powers, promoting compliance, acting on non-compliance, etc.</p> |

| Elements | Performance Criteria |
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| 1. Monitor areas under jurisdiction | <p>1.1 Risk assessment analysis is conducted to identify and prioritise areas for monitoring and to identify methodology.</p> <p>1.2 Monitoring is conducted in accordance with legislation, policy and procedures.</p> <p>1.3 Inspections and/or compliance audits are conducted in accordance with organisational policy and procedures.</p> <p>1.4 Specialist equipment is utilised when required, in accordance with legislation, policy and procedures.</p> <p>1.5 Safety of self and others is protected in accordance with legislation, policy and procedures.</p> <p>1.6 Cooperation with other organisations and jurisdictions is facilitated in accordance with organisational policy and procedures.</p> |
| 2. Receive or identify allegation of non-compliance | <p>2.1 Referrals relating to non-compliance are recorded in accordance with legislation, policy and procedures.</p> <p>2.2 Possible and potential breaches are responded to in a timely manner in accordance with legislation, policy and procedures.</p> <p>2.3 Preliminary information is assessed to establish the offence and is validated to confirm the need for action in accordance with organisational policy and procedures.</p> <p>2.4 Complainants are handled in accordance with organisational guidelines which may indicate referral to more senior personnel.</p> |
| 3. Determine levels of compliance | <p>3.1 Timely consultation is undertaken as necessary to obtain advice on methodology to adopt and prevent gaps occurring in evidence collection.</p> <p>3.2 Evidence collection methodology is selected according to the purpose, situation and operational guidelines.</p> <p>3.3 Information/samples are collected, analysed and secured in</p> |

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| | <p>accordance with legislation, policy and procedures.</p> <p>3.4 Information/samples are made relevant and sufficient for the purpose identified.</p> <p>3.5 Assessment is made against the requirements of the legislation and the level of compliance identified and documented according to legal and organisational requirements.</p> <p>3.6 Further action is determined consistent with the level of compliance and recorded/reported in accordance with legislation, policy and procedures.</p> |
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| Variable | Range |
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| Risk assessment | <p>may include:</p> <ul style="list-style-type: none"> • formal risk management cycle • informal risk assessment |
| Monitoring | <p>may include:</p> <ul style="list-style-type: none"> • surveillance • spot checks • comparison of data over time • audit • quality assurance reviews |
| Legislation, policy and procedures | <p>may include:</p> <ul style="list-style-type: none"> • enabling legislation • occupational health and safety legislation • workers compensation legislation • equal employment opportunity and anti-discrimination law • environment legislation and sustainability procedures • listening devices legislation • privacy legislation/instructions • organisational procedures and protocols • standard operating procedures • Ethiopian standards |
| Specialist equipment | <p>may include:</p> <ul style="list-style-type: none"> • computer data analysis systems • computer aided auditing techniques • electronic equipment • listening devices • cameras • chemical analysis kits • security cupboards • oil sampling kits • personal protective equipment |
| Other organisations/ jurisdictions | <p>may include:</p> <ul style="list-style-type: none"> • federal police • military police • regulatory agencies |

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| | <ul style="list-style-type: none"> • Government law enforcement officers • fire and rescue • emergency services |
| Referrals | <p>may include:</p> <ul style="list-style-type: none"> • suspicions • complaints • allegations of non-compliance |
| Evidence collection methodology | <p>may include:</p> <ul style="list-style-type: none"> • sampling • audit • interviews • data analysis • document analysis |
| Recording/reporting | <p>may include:</p> <ul style="list-style-type: none"> • decision to proceed/not proceed • justification for decision • informing other areas or organisations of information received/gathered and the action to be taken, if any, subject to confidentiality and privacy legislation |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competence that confirms:</p> <ul style="list-style-type: none"> • the knowledge requirements of this unit • the skill requirements of this unit • assessment of compliance in a range of (3 or more) contexts (or occasions, over time) |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • legislation, standards, policies and legal precedents • organisational procedures, guidelines and protocols • knowledge of own and others' jurisdictions • risk management in the context of compliance assessment • application of audit tools • research and sampling methodologies • security storage of evidence/information • procedures for recording allegations/complaints • specialist equipment • equal employment opportunity, equity and diversity principles • public sector legislation such as occupational health and safety and environment and sustainability relating to the assessment of client compliance |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • undertaking research, analysis and problem solving in the context of assessing compliance • applying regulations and codes of practice • using information technology for data analysis, recording and reporting • communicating including questioning and negotiating of meaning in sometimes difficult situations • responding to diversity, including gender and disability |

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| | <ul style="list-style-type: none"> • reading and applying complex information from legislation • applying public sector legislation such as occupational health and safety and environmental and sustainability procedures in the context of assessing client compliance |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Act on Non-compliance |
| Unit Code | TRD LMS4 14 0215 |
| Unit Descriptor | <p>This unit covers the competency to issue advice, instructions, warnings, notices, fines and other actions in response to non-compliance situations. It includes attending situations where non-compliance is suspected/ alleged, and taking action on non-compliance.</p> <p>In practice, acting on non-compliance may overlap with other generalist or specialist public sector work activities such as acting ethically, exercising regulatory powers, promoting compliance, assessing non-compliance, etc.</p> |

| Elements | Performance Criteria |
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| 1. Attend situations where non-compliance is suspected/alleged | <p>1.1 Procedure is followed in accordance with legal requirements, organisational policy and procedures.</p> <p>1.2 Personal conduct is maintained in accordance with organisational guidelines and protocols.</p> <p>1.3 Safety of self and others is protected in accordance with operational policy and procedures.</p> <p>1.4 When assistance is required, requests are made timely in accordance with legislation, policy and procedures.</p> <p>1.5 Activities and actions are carried out in accordance with legislation, organisational policy and procedures and the rules of evidence.</p> |
| 2. Take action on non-compliance | <p>2.1 Mitigating circumstances are considered, where appropriate, in accordance with organisational policy and procedures.</p> <p>2.2 Action on non-compliance is selected to match the seriousness of the offence.</p> <p>2.3 Clients are informed of the action, justification for it and their rights of appeal in accordance with legislation, organisational policy and procedures.</p> <p>2.4 Action is taken in accordance with legal requirements and organisational guidelines.</p> <p>2.5 Personal actions/conduct is carried out in accordance with organisational guidelines and protocols and protect the rights and responsibilities of clients.</p> |

| Variable | Range |
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| Assistance | <p>may include:</p> <ul style="list-style-type: none"> • other officers • other jurisdictions • other organisations • police |

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| Legislation, policy and procedures | <p>may include:</p> <ul style="list-style-type: none"> • enabling legislation • organisational processes • codes of conduct • equal employment opportunity and anti-discrimination law |
| Action on non-compliance | <p>May include:</p> <ul style="list-style-type: none"> • oral or written instructions • warnings • seizure • infringement notices • expiation • cautions • fines • summons • notice of legal action • negotiation to achieve compliance if legally possible, and in accordance with organisational policy and procedures, undertaken when exercising prosecutorial discretion (sufficiency of evidence, public interest, reasonable prospect of success) |
| Clients | <p>may include:</p> <ul style="list-style-type: none"> • people from all age groups, cultural and linguistic backgrounds • other public sector or private sector organisations • people with weapons • people affected by alcohol or drugs |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences in:</p> <ul style="list-style-type: none"> • the knowledge requirements of this unit • the skill requirements of this unit • action on non-compliance in a range of (3 or more) contexts (or occasions, over time) |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • legislation, organisational procedures and guidelines • organisational parameters for decision making • range of appropriate actions possible for different offences • negotiation in the context of achieving compliance • awareness of social and cultural issues (demographics) • public sector legislation and standards • occupational health and safety and environmental considerations to ensure the safety of self and others |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • undertaking negotiation and conflict resolution • applying risk management and self preservation techniques • using judgment and decision making • exchanging often complex oral information in a form to suit diverse audiences • responding to diversity, including gender and disability |

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| | <ul style="list-style-type: none"> • writing requiring accuracy of expression and formality in structure and format • applying public sector legislation such as occupational health and safety and environmental procedures in the context of actions on non-compliance |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Undertake Inspections and Monitoring |
| Unit Code | TRD LMS4 15 0215 |
| Unit Descriptor | <p>This unit covers the requirements to undertake both routine and non-routine inspections and monitoring of a more complex or detailed nature, with discretion to determine appropriate action in accordance with relevant Acts and regulations.</p> <p>Typically work will be under general direction, with full responsibility for delegated duties within a generally defined area. It includes planning and organising inspection and monitoring activities, undertaking inspections, acting on non-compliance and providing reports, information and training.</p> <p>In practice, undertaking complex inspections and monitoring may overlap with other generalist or specialist work activities such as exercising regulatory powers, using resources, gathering and analyzing information, upholding and supporting public service values, working safely, applying government processes, etc.</p> |

| Elements | Performance Criteria |
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| 1. Plan and organise inspection and monitoring activities | <p>1.1 Outputs are confirmed and inspection and monitoring activities and responsibilities are determined in accordance with organisational requirements.</p> <p>1.2 Procedures, timeframes, resources and equipment requirements are determined for self and others in accordance with organisational and task requirements.</p> <p>1.3 Resources/equipment are obtained and prepared in accordance with organisational and task requirements.</p> <p>1.4 Legislative requirements, risk management practices and occupational health and safety requirements are determined.</p> <p>1.5 Communication strategies and development opportunities are identified and adjusted to suit a range of clients in making them aware of their obligations under relevant legislation, in accordance with organisational policy and procedures.</p> <p>1.6 Procedural and information guides are reviewed and updated as required.</p> |
| 2. Undertake inspections and monitoring | <p>2.1 Inspections and monitoring activities are carried out under general direction in accordance with organisational and legislative requirements including occupational health and safety.</p> <p>2.2 Risk management strategies are developed and implemented as required in accordance with set procedures and timelines.</p> <p>2.3 Resources/equipment are used and maintained in accordance with organisational and task requirements.</p> |

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| | 2.4 When required, operational and technical advice is provided to subordinate officers in accordance with organisational policy and procedures. |
| 3. Act on non-compliance | <p>3.1 Information/education is provided to achieve client compliance in accordance with organisational guidelines and legislative requirements relating to the seriousness of the possible breach.</p> <p>3.2 Further action as a result of failure to achieve compliance is taken in accordance with organisational guidelines and legislative requirements relating to the seriousness of the possible breach.</p> <p>3.3 Compliance requirements of legislation/regulations are identified, and contraventions and recommended action are reported in accordance with organisational policy and procedures.</p> <p>3.4 Serious or complex situations are referred for advice or resolution in accordance with organisational policy and procedures.</p> <p>3.5 The elements of each offence to be prosecuted under relevant legislation are identified, and information/evidence is collected and provided in accordance with legislation, procedures and rules of evidence.</p> <p>3.6 When required, court attendance and conduct requirements are fulfilled in compliance with organisational guidelines.</p> |
| 4. Provide reports, information and training | <p>4.1 Records are maintained and reports are prepared and provided in accordance with organisational requirements.</p> <p>4.2 Requirements of relevant legislation are interpreted and information and advice are provided on technical and operational matters.</p> <p>4.3 On-the-job inspection/monitoring training is provided in accordance with organisational requirements.</p> |

| Variable | Range |
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| Activities | may include: <ul style="list-style-type: none"> • inspections/examinations • monitoring • surveillance • focused and benchmark audit activities • remote monitoring • other compliance assurance activities |
| Procedures | may include: <ul style="list-style-type: none"> • observation • handling procedures • sampling procedures • rejection procedures |

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| | <ul style="list-style-type: none"> • storage procedures • disinfection procedures • treatment procedures • organisational guidelines and code of conduct • incident reporting procedures • safety procedures • emergency procedures • evacuation procedures |
| Resources and equipment | <p>may include:</p> <ul style="list-style-type: none"> • inspection equipment • personal protective equipment - respirators, gloves, overalls, boots, hearing protection, goggles, masks etc • test kit equipment • recording equipment • storage equipment/facilities • entry authority/warrant • Global Positioning System (GPS) equipment • communication equipment • computers • satellite imagery • aerial photographs • spatial data and information • vehicles - 2 or 4 wheel drive |
| Legislation | <p>may include:</p> <ul style="list-style-type: none"> • Ethiopian legislation and regulations, for example: <ul style="list-style-type: none"> ➤ Quarantine Act, proclamations and regulations ➤ Crimes Act and Criminal Code Act ➤ Customs Act and regulations ➤ Wildlife Protection Act ➤ Export Control Act ➤ Imported Foods Act ➤ Occupational Health and Safety Act • Government legislation and regulations, such as those relating to: <ul style="list-style-type: none"> ➤ agriculture ➤ horticulture ➤ conservation and land management ➤ fisheries ➤ environmental protection ➤ building ➤ water ➤ emergencies ➤ international legislation/codes of behaviour |
| Inspections and monitoring activities | <p>may relate to:</p> <ul style="list-style-type: none"> • aircraft • airfreight • animal products • animals • cargo • cereals |

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| | <ul style="list-style-type: none"> • collection of biological specimens • disposal of organic waste • fresh produce • goods • land condition, such as: <ul style="list-style-type: none"> ➤ topography ➤ salinity ➤ erosion ➤ weed infestation ➤ vermin infestation ➤ fire hazard ➤ over grazing • land improvements, such as: <ul style="list-style-type: none"> ➤ fences ➤ buildings ➤ sporting or playground equipment ➤ irrigation infrastructure ➤ sewerage infrastructure ➤ waterfront occupations ➤ community structures ➤ land usage • leases and other tenures, to ensure compliance with conditions • licence/permit compliance (e.g. vegetation clearing) • live fish • livestock • mail • mineral samples • passenger baggage • people • pests • plant products • plants • premises • properties • reserves and their use/s • survey activities to maintain readiness for district emergency plans • vector monitoring • vessels |
| General direction | <p>may include:</p> <ul style="list-style-type: none"> • supervisors • senior policy officers • senior inspectors • line managers • project managers • program managers • inspection specialists |
| Risk management strategies | <p>may include:</p> <ul style="list-style-type: none"> • monitoring |

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| | <ul style="list-style-type: none"> • treatment • containment • control • eradication • destruction • biosecurity strategies |
| Action | <p>may include:</p> <ul style="list-style-type: none"> • advice • warning • formal notification of intent • infringement notices • on-the-spot fines • court prosecution |
| Collecting | <p>may include:</p> <ul style="list-style-type: none"> • observation • interviewing • seizure • sampling • specimen collection • recording • maintenance of case files • determination of land ownership |
| Records | <p>may include:</p> <ul style="list-style-type: none"> • notes • case files • statistics • forms (application forms, disease notification forms, etc) • notices (seizure notice, infringement notice, etc) • invoices • receipts • commercial documentation such as bills of lading, airway bills |
| Non-compliance | <p>may include:</p> <ul style="list-style-type: none"> • both routine and non-routine matters of a more complex or detailed nature with discretion to determine appropriate action • referral to senior staff of decisions that are more difficult, or of potential interest to external parties such as the media, public, political parties etc |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Must demonstrate skills and knowledge competences that confirm:</p> <ul style="list-style-type: none"> • the knowledge requirements of this unit • the skill requirements of this unit • performance under general direction with responsibility within a generally defined area for inspections and monitoring undertaken in a range of (3 or more) contexts (or occasions, over time |
| Underpinning | Demonstrate knowledge of: |

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| Knowledge and attitudes | <ul style="list-style-type: none"> • knowledge and understanding of: <ul style="list-style-type: none"> ➤ public sector legislation including occupational health and safety, environment, privacy etc ➤ organisational policy and procedures ➤ inspection procedures ➤ monitoring procedures ➤ enabling legislation ➤ elements of an offence ➤ responses to non-compliance ➤ equity and diversity principles ➤ workplace and industry environment |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • undertaking observation and analysis • communicating with a diverse range of clients and staff • responding to diversity, including gender and disability • writing reports using standard formats • using computers for word processing and manipulation of statistical data • operating workplace equipment • applying public sector legislation such as occupational health and safety and environment in the context of inspection and monitoring |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Provide Technical Support in advanced Equipment Acquisition |
| Unit Code | <u>TRD LMS4 16 0215</u> |
| Unit Descriptor | This unit covers the knowledge, skills and attitudes required to track or determine technological updates and latest biomedical equipment and its specifications. It also includes preparing specifications and evaluation of biomedical equipment. |

| Elements | Performance Criteria |
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| 1. Track technological development on biomedical equipment | 1.1 Available technologies are assessed/searched from available and accessible sources. 1.2 Appropriate technology is selected based on requirement. 1.3 Selected technology is recommended based on analysis of real condition. |
| 2. Prepare biomedical equipment specifications | 2.1 Required information and specifications are identified and gathered correctly from the catalogue, experienced experts and other related publications. 2.2 Gathered data are studied/ analyzed based on the approved requirement / specifications or needs. 2.3 Capacity and working system are determined according to established needs. 2.4 Equipment specifications are prepared and documented based on standard parameters. |
| 3. Evaluate technical document of bids | 3.1 Technical proposals of the bid documents are acquired in accordance with organization/company standard procedures. 3.2 Specifications are evaluated and compared against declared requirements. 3.3 Correct and best offer is identified based on approved criteria. 3.4 Report of evaluation and recommendations are documented and submitted based on company standards. |

| Variable | Range |
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| Other sources | May include: <ul style="list-style-type: none"> • user's requirement • equipment-performance and manufacturer's information background • procurement directives • regulatory information and standards • reference books |

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| | <ul style="list-style-type: none"> • journals • internet |
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| Evidence Guide | |
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| Critical aspects of Competence | Assessment requires evidence that the candidate: <ul style="list-style-type: none"> • tracked technological development on biomedical equipment • prepared biomedical equipment specification • evaluated technical document of bids |
| Underpinning Knowledge and Attitudes | Demonstrate knowledge of: <ul style="list-style-type: none"> • health care technology • tracking process • internet browsing • different biomedical equipment and their specifications • procurement procedures • technical bid documents • data / information gathering and evaluation process • catalogue types and categories |
| Underpinning Skills | Demonstrate skills of: <ul style="list-style-type: none"> • preparing biomedical equipment specification • gathering and analyzing data / information • evaluating technical document of bids |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
|---|---|
| Unit Title | Process and Interpret Data |
| Unit Code | TRD LMS4 17 0215 |
| Unit Descriptor | <p>This unit of competency covers the ability to retrieve data, evaluate formulae and perform scientific calculations, present and interpret information in tables and graphs and keep accurate records. The unit requires personnel to solve problems of limited complexity where the information may be less obvious, but not contradictory, and can be determined by direct reasoning.</p> <p>This unit of competency is applicable to laboratory assistants, field/laboratory technicians and instrument operators in all industry sectors.</p> |

| Elements | Performance Criteria |
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| 1. Retrieve and check data | <p>1.1 Data is stored and retrieved using appropriate files and/or application software.</p> <p>1.2 Quality of data is verified the using enterprise procedures.</p> <p>1.3 Errors in data are rectified using enterprise procedures.</p> |
| 2. Calculate scientific quantities | <p>2.1 Statistical values for given data are calculated.</p> <p>2.2 Scientific quantities are calculated using given formulae and data and uncertainties estimated.</p> <p>2.3 Calculated quantities are ensured to be consistent with estimations and expectations.</p> <p>2.4 All calculated quantities are reported using the appropriate units and correct number of significant figures.</p> |
| 3. Present data in tables, charts and graphs | <p>3.1 Data is presented in clearly labelled tables and charts.</p> <p>3.2 Data is graphed using appropriate scales to span the range of data or display trends.</p> <p>3.3 All data is reported using the appropriate units and number of significant figures.</p> |
| 4. Interpret data in tables, charts and graphs | <p>4.1 Significant features of graphs, such as gradients, intercept, maximum and minimum values, and limit lines are interpreted.</p> <p>4.2 Trends in data are recognised and reported.</p> |
| 5. Keep accurate records and maintain confidentiality | <p>5.1 Information is transcribed accurately.</p> <p>5.2 The accuracy of records is verified following enterprise procedures.</p> <p>5.3 Workplace records are filed and stored in accordance with enterprise procedures.</p> <p>5.4 All reference documents are filed logically and kept up-to-</p> |

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| | <p>date and secured.</p> <p>5.5 Enterprise confidentiality standards are observed.</p> |
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| Variable | Range |
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| Data | <p>may be recorded on:</p> <ul style="list-style-type: none"> • worksheets • spreadsheets • databases linked to information management systems <p>Data may include results of:</p> <ul style="list-style-type: none"> • observations • tests and measurements • analyses • surveys • quality assurance and control assessments <p>may be presented in the form of:</p> <ul style="list-style-type: none"> • graphs • tables • histograms • pie charts • bar charts • control charts • semi-quantitative observations and be expressed on a scale (for example, 1 to 4 or + to +++) |
| Calculations of scientific quantities | <p>may include:</p> <ul style="list-style-type: none"> • converting units involving multiples and submultiples • significant figures, round off, estimate and approximate • transposing and evaluating formulae • fractions, decimals, proportions and percentages • perimeters and angles • percentage and absolute uncertainties in measurements and test results • statistical values of data, such as mean, median, mode and standard deviation • areas (m²) and volumes (mL, L, m³) of regular shapes, such as packaging • dose (mg), average mass, mass percentage, density, specific gravity, moisture, relative and absolute humidity, viscosity and permeability • ratios, such as mass to mass, mass to volume and volume to volume percentages • concentration, such as molarity, g/100mL, mg/L, mg/(L, ppm, ppb, dilution mL/L • average count, colonies per swab surface and cell counts, such as live and dead/total • process variables, such as pressure, gauge pressure, velocity and flow rates • biological oxygen demand (BOD), chemical oxygen demand |

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| | <p>(COD) and total organic carbons (TOC)</p> <ul style="list-style-type: none"> • % content of moisture, ash, fat, protein, alcohol, sulphur dioxide and trace metals, such as calcium or zinc • food properties, such as % concentration (dry), friability, bitterness, brix, free amino nitrogen, diastatic power, calorific content and yeast viability • stress, strain, moduli and force |
| Calculating | <p>may be performed:</p> <ul style="list-style-type: none"> • with or without a calculator • using computer software, spreadsheets, databases and statistical packages |
| Records | <p>could include information associated with:</p> <ul style="list-style-type: none"> • purchase of equipment and materials, service records • safety procedures • history of calibration and test results |
| Codes of practice | <p>Where reference is made to industry codes of practice, and/or Ethiopia/international standards, it is expected the latest version will be used</p> |
| Standards, codes, procedures and/or enterprise requirements | <p>may include:</p> <ul style="list-style-type: none"> • Ethiopian and international standards such as: • The International System of units (SI) and its application • Accuracy (trueness and precision) of measurement methods and results • Uncertainty of measurement - Part 3 Guide to the expression of Uncertainty in Measurement (GUM) • Quantifying uncertainty in analytical measurement • national measurement regulations and guidelines • National Association of Testing Authorities (NATA) Technical notes • Material Safety Data Sheets (MSDS) • equipment manuals and warranty, supplier catalogues and handbooks • sampling and test procedures and Standard Operating Procedures (SOPs) • enterprise quality manual and customer quality plan • validation of the equipment and associated software where applicable • validation of spreadsheets developed in-house for assay and process calculations |
| Concepts of metrology | <p>may include:</p> <ul style="list-style-type: none"> • that all measurements are estimates • measurements belong to a population of measurements of the measured parameters • repeatability • precision • accuracy • significant figures • sources of error • uncertainty |

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| | <ul style="list-style-type: none"> • traceability |
| Occupational Health and Safety (OHS) and environmental management requirements | <p>May include:</p> <ul style="list-style-type: none"> • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Nutrition Research Institute and Ministry of Health |

| Evidence Guide | |
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| Critical aspects of Competence | <p>Must demonstrate knowledge and skills competence to:</p> <ul style="list-style-type: none"> • code, record and check the documentation of data • calculate scientific and statistical quantities relevant to the workplace and present accurate results in the required format • recognise anomalies and trends in data • maintain the confidentiality of data in accordance with workplace and regulatory requirements • keep records up-to-date and secure. |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • concepts of metrology • the International System of units (SI) • relevant scientific and technical terminology • uncertainty associated with measurement steps • procedures for coding, entering, storing, retrieving and communicating data • procedures for verifying data and rectifying mistakes • converting units involving multiples and submultiples • significant figures, rounding off, estimating, approximating • transposing and evaluating formulae • calculations involving fractions, decimals, proportions and percent • determining statistical values of data such as mean, median, mode and standard deviation • procedures for maintaining and filing records, and maintaining security of data |
| Underpinning Skills | <p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • performing calculations of scientific quantities • using scientific notation • applying the concepts of metrology • applying calculations to the workplace • coding, recording and checking of data accurately • presenting accurate results in the required format • preparing graphs, tables and charts (pie, bar, histogram) and interpreting trends • preparing and interpreting process control charts |

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| | <ul style="list-style-type: none"> maintaining the confidentiality of data in accordance with workplace and regulatory requirements |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> Interview / Written Test Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Plan and Organize Work |
| Unit Code | TRD LMS4 18 0215 |
| Unit Descriptor | This unit covers the knowledge, skills and attitude required in planning and organizing work activities in a production application. It may be applied to a small independent operation or to a section of a large organization. |

| Elements | Performance Criteria |
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| 1. Set objectives | <p>1.1 Objectives are planned consistent with and linked to work activities in accordance with organizational aims.</p> <p>1.2 Objectives are stated as measurable targets with clear time frames.</p> <p>1.3 Support and commitment of team members are reflected in the objectives.</p> <p>1.4 Realistic and attainable objectives are identified.</p> |
| 2. Plan and schedule work activities | <p>2.1 Tasks/work activities to be completed are identified and prioritized as directed.</p> <p>2.2 Tasks/work activities are broken down into steps in accordance with set time frames and achievable components.</p> <p>2.3 Task/work activities are assigned to appropriate team or individuals in accordance with agreed functions.</p> <p>2.4 Resources are allocated as per requirements of the activity.</p> <p>2.5 Schedule of work activities is coordinated with personnel concerned.</p> |
| 3. Implement work plans | <p>3.1 Work methods and practices are identified in consultation with personnel concerned.</p> <p>3.2 Work plans are implemented in accordance with set time frames, resources and standards.</p> |
| 4. Monitor work activities | <p>4.1 Work activities are monitored and compared with set objectives.</p> <p>4.2 Work performance is monitored.</p> <p>4.3 Deviations from work activities are reported and recommendations are coordinated with appropriate personnel and in accordance with set standards.</p> <p>4.4 Reporting requirements are complied with in accordance with recommended format.</p> <p>4.5 Timeliness of report is observed.</p> <p>4.6 Files are established and maintained in accordance with standard operating procedures.</p> |

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| <p>5. Review and evaluate work plans and activities</p> | <p>5.1 Work plans, strategies and implementation are reviewed based on accurate, relevant and current information.</p> <p>5.2 Review is done based on comprehensive consultation with appropriate personnel on outcomes of work plans and reliable feedback.</p> <p>5.3 Results of review are provided to concerned parties and formed as the basis for adjustments/simplifications to be made to policies, processes and activities.</p> <p>5.4 Performance appraisal is conducted in accordance with organization rules and regulations.</p> <p>5.5 Performance appraisal report is prepared and documented regularly as per organization requirements.</p> <p>5.6 Recommendations are prepared and presented to appropriate personnel/authorities.</p> <p>5.7 Feedback mechanisms are implemented in line with organization policies.</p> |
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| Variable | Range |
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| Objectives | May include but not limited to: <ul style="list-style-type: none"> • Specific • General |
| Resources | May include but not limited to: <ul style="list-style-type: none"> • Personnel • Equipment and technology • Services • Supplies and materials • Sources for accessing specialist advice • Budget |
| Schedule of work activities | May include but not limited to: <ul style="list-style-type: none"> • Daily • Work-based • Contractual • Regular |
| Work methods and practices | May include but not limited to: <ul style="list-style-type: none"> • Legislated regulations and codes of practice • Industry regulations and codes of practice • Occupational health and safety practices |
| Work plans | May include but not limited to: <ul style="list-style-type: none"> • Daily work plans • Project plans • Program plans • Resource plans • Skills development plans • Management strategies and objectives |
| Standards | May include but not limited to: <ul style="list-style-type: none"> • Performance targets • Performance management and evaluation systems • Occupational standards |

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| | <ul style="list-style-type: none"> • Employment contracts • Client contracts • Discipline procedures • Workplace assessment guidelines • Internal quality assurance • Internal and external accountability and auditing requirements • Training Regulation Standards • Safety Standards |
| Appropriate personnel/ authorities | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Appropriate personnel include: <ul style="list-style-type: none"> ➢ Management ➢ Line Staff |
| Feedback mechanisms | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Verbal feedback • Informal feedback • Formal feedback • Questionnaire • Survey • Group discussion |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • set objectives • plan and schedule work activities • implement work plans • monitor work activities • review and evaluate work plans and activities |
| Underpinning Knowledge and Attitudes | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • organization's strategic plan, policies rules and regulations, laws and objectives for work unit activities and priorities • organizations policies, strategic plans, guidelines related to the role of the work unit • team work and consultation strategies |
| Underpinning Skills | <p>Demonstrates skill to:</p> <ul style="list-style-type: none"> • plan • lead • organize • coordinate • communicate • inter-and intra-person/motivation skills • present |
| Resource Implications | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |

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| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |
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| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Migrate to New Technology |
| Unit Code | TRD LMS4 19 0215 |
| Unit Descriptor | This unit defines the competence required to apply skills and knowledge in using new or upgraded technology. The rationale behind this unit emphasizes the importance of constantly reviewing work processes, skills and techniques in order to ensure that the quality of the entire business process is maintained at the highest level possible through the appropriate application of new technology. To this end, the person is typically engaged in on-going review and research in order to discover and apply new technology or techniques to improve aspects of the organization's activities. |

| Elements | Performance Criteria |
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| 1. Apply existing knowledge and techniques to technology and transfer | <p>1.1 Situations are identified where existing knowledge can be used as the basis for developing new skills.</p> <p>1.2 New or upgraded technology skills are acquired and used to enhance learning.</p> <p>1.3 New or upgraded equipment are identified, classified and used where appropriate, for the benefit of the organization.</p> |
| 2. Apply functions of technology to assist in solving organizational problems | <p>2.1 Testing of new or upgraded equipment is conducted according to the specification manual.</p> <p>2.2 Features of new or upgraded equipment are applied within the organization</p> <p>2.3 Features and functions of new or upgraded equipment are used for solving organizational problems</p> <p>2.4 Sources of information relating to new or upgraded equipment are accessed and used</p> |
| 3. Evaluate new or upgraded technology performance | <p>3.1 New or upgraded equipment is evaluated for performance, usability and against OHS standards.</p> <p>3.2 Environmental considerations are determined from new or upgraded equipment.</p> <p>3.3 Feedback is sought from users where appropriate.</p> |

| Variables | Range |
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| Environmental Considerations | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> recycling, safe disposal of packaging (e.g. cardboard, polystyrene, paper, plastic) and correct disposal of waste materials by an authorized body |
| Feedback | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> surveys, questionnaires, |

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| | <ul style="list-style-type: none"> interviews and meetings |
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| Evidence Guide | |
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| Critical Aspects of Competence | Competence must confirm the ability to transfer the application of existing skills and knowledge to new technology |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> Broad awareness of current technology trends and directions in the industry (e.g. systems/procedures, services, new developments, new protocols) Knowledge of vendor product directions Ability to locate appropriate sources of information regarding metal manufacturing and new technologies Current industry products/services, procedures and techniques with knowledge of general features Information gathering techniques |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> Research skills for identifying broad features of new technologies Ability to assist in the decision making process Literacy skills in regard to interpretation of technical manuals Ability to solve known problems in a variety of situations and locations Evaluate and apply new technology to assist in solving organizational problems General analytical skills in relation to known problems |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> Interview / Written Test Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Establish Quality Standards |
| Unit Code | TRD LMS4 20 0215 |
| Unit Descriptor | This unit covers the knowledge, skills and attitudes required to establish quality specifications for work outcomes and work performance. It includes monitoring and participation in maintaining and improving quality, identifying critical control points in the production of quality output and assisting in planning and implementing of quality assurance procedures. |

| Elements | Performance Criteria |
|---|---|
| 1. Establish quality specifications for product | 1.1 Market specifications are sourced and legislated requirements identified. 1.2 Quality specifications are developed and agreed. 1.3 Quality specifications are documented and introduced to organization staff / personnel in accordance with the organization policy. 1.4 Quality specifications are updated when necessary. |
| 2. Identify hazards and critical control points | 2.1. Critical control points impacting on quality are identified. 2.2. Degree of risk for each hazard is determined. 2.3. Necessary documentation is accomplished in accordance with organization quality procedures. |
| 3. Assist in planning of quality assurance procedures | 3.1 Procedures for each identified control point are developed to ensure optimum quality. 3.2 Hazards and risks are minimized through application of appropriate controls. 3.3 Processes are developed to monitor the effectiveness of quality assurance procedures. |
| 4. Implement quality assurance procedures | 4.1 Responsibilities are allocated for carrying out procedures to staff and contractors. 4.2 Instructions are prepared in accordance with the enterprise's quality assurance program. 4.3 Staff and contractors are given induction training on the quality assurance policy. 4.4 Staff and contractors are given in-service training relevant to their allocated safety procedures . |
| 5. Monitor quality of work outcome | 5.1 Quality requirements are identified 5.2 Inputs are inspected to confirm capability to meet quality requirements 5.3 Work is conducted to produce required outcomes. |

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| | <p>5.4 Work processes are monitored to confirm quality of output and/or service.</p> <p>5.5 Processes are adjusted to maintain outputs within specification.</p> |
| 6. Participate in maintaining and improving quality at work | <p>6.1 Work area, materials, processes and product are routinely monitored to ensure compliance with quality requirements.</p> <p>6.2 Non-conformance in inputs, process, product and/or service is identified and reported according to workplace reporting requirements.</p> <p>6.3 Corrective action is taken within level of responsibility to maintain quality standards.</p> <p>6.4 Quality issues are raised with designated personnel.</p> |
| 7. Report problems that affect quality | <p>7.1 Potential or existing quality problems are recognized.</p> <p>7.2 Instances of variation in quality are identified from specifications or work instructions.</p> <p>7.3 Variation and potential problems are reported to supervisor/manager according to enterprise guidelines.</p> |

| Variable | Range |
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| Sourced | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • End-users • Customers or stakeholders |
| Legislated requirements | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Verification of product quality as part of consumer legislation or specific legislation related to product content or composition. |
| Safety procedures. | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Use of tools and equipment for fabrication/production/manufacturing works • Workplace environment and handling of material safety, • Following occupational health and safety procedures designated for the task • Respect the policies, regulations, legislations, rule and procedures for manufacturing/production/fabrication works |

| Evidence Guide | |
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| Critical Aspect of Competence | <p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • Monitor quality of work • Establish quality specifications for product • Participate in maintaining and improving quality at work • Identify hazards and critical control points in the production of quality product • Assist in planning of quality assurance procedures • Report problems that affect quality • Implement quality assurance procedures |

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| Underpinning Knowledge and Attitudes | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • work and product quality specifications • quality policies and procedures • improving quality at work • hazards and critical points of operation • obtaining and using information • applying federal and regional legislation within day-today work activities • accessing and using management systems to keep and maintain accurate records • requirements for correct preparation and operation • technical writing |
| Underpinning Skills | <p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • monitor quality of work • establish quality specifications for product • participate in maintaining and improving quality at work • identify hazards and critical control points in the production of quality product • assist in planning of quality assurance procedures • report problems that affect quality • implement quality assurance procedures |
| Resource Implications | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level IV | |
|---|---|
| Unit Title | Develop Individuals and Team |
| Unit Code | TRD LMS4 21 0215 |
| Unit Descriptor | This unit covers the knowledge, skills and attitudes required to determine individual and team development needs and facilitate the development of the workgroup. |

| Elements | Performance Criteria |
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| 1. Provide team leadership | <p>1.1 Learning and development needs are systematically identified and implemented in line with organizational requirements.</p> <p>1.2 Learning plan is collaboratively developed and implemented to meet individual and group training and developmental needs.</p> <p>1.3 Individuals are encouraged to self-evaluate performance and identify areas for improvement.</p> <p>1.4 Feedback on performance of team members is collected from relevant sources and compared with established team learning process.</p> |
| 2. Foster individual and organizational growth | <p>2.1 Learning and development program goals and objectives are identified to match the specific knowledge and skills requirements of Competence standards.</p> <p>2.2 Learning delivery methods are made appropriate to the learning goals, the learning style of participants and availability of equipment and resources.</p> <p>2.3 Workplace learning opportunities and coaching/ mentoring assistance are provided to facilitate individual and team achievement of competencies.</p> <p>2.4 Resources and timelines required for learning activities are identified and approved in accordance with organizational requirements.</p> |
| 3. Monitor and evaluate workplace learning | <p>3.1 Feedback from individuals or teams is used to identify and implement improvements in future learning arrangements.</p> <p>3.2 Outcomes and performance of individuals/teams are assessed and recorded to determine the effectiveness of development programs and the extent of additional support.</p> <p>3.3 Modifications to learning plans are negotiated to improve the efficiency and effectiveness of learning.</p> <p>3.4 Records and reports of competence are maintained within organizational requirement.</p> |
| 4. Develop team commitment and cooperation | <p>4.1 Open communication processes to obtain and share information is used by team.</p> <p>4.2 Decisions are reached by the team in accordance with its agreed roles and responsibilities.</p> |

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| | 4.3 Mutual concern and camaraderie are developed in the team. |
| 5. Facilitate accomplishment of organizational goals | <p>5.1 Team members are made actively participatory in team activities and communication processes.</p> <p>5.2 Individual and joint responsibility is developed by teams members for their actions.</p> <p>5.3 Collaborative efforts are sustained to attain organizational goals.</p> |

| Variable | Range |
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| Learning and development needs | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Coaching, monitoring and/or supervision • Formal/informal learning program • Internal/external training provision • Work experience/exchange/opportunities • Personal study • Career planning/development • Performance evaluation • Workplace skills assessment • Recognition of prior learning |
| Organizational requirements | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Quality assurance and/or procedures manuals • Goals, objectives, plans, systems and processes • Legal and organizational policy/guidelines and requirements • Safety policies, procedures and programs • Confidentiality and security requirements • Business and performance plans • Ethical standards • Quality and continuous improvement processes and standards |
| Feedback on performance | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Formal/informal performance evaluation • Obtaining feedback from supervisors and colleagues • Obtaining feedback from clients • Personal and reflective behavior strategies • Routine and organizational methods for monitoring service delivery |
| Learning delivery methods | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • On the job coaching or monitoring • Problem solving • Presentation/demonstration • Formal course participation • Work experience and involvement in professional networks • Conference and seminar attendance |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> • identify and implement learning opportunities for others • give and receive feedback constructively |

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| | <ul style="list-style-type: none"> • facilitate participation of individuals in the work of the team • negotiate plans to improve the effectiveness of learning • prepare learning plans to match skill needs • access and designate learning opportunities |
| Underpinning Knowledge and Attitude | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • coaching and monitoring principles • understanding how to work effectively with team members who have diverse work styles, aspirations, cultures and perspective • understanding how to facilitate team development and improvement • understanding methods and techniques to obtain and interpreting feedback • understanding methods for identifying and prioritizing personal development opportunities and options • knowledge of career paths and competence standards in the industry |
| Underpinning Skills | <p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • read and understand a variety of texts, preparing general information and documents according to target audience; spell with accuracy; use grammar and punctuation effective relationships and conflict management • communicate including receiving feedback and reporting, maintaining effective relationships and conflict management • plan and organize required resources and equipment to meet learning needs • coach and mentor skills to provide support to colleagues • report to organize information; assess information for relevance and accuracy; identify and elaborate on learning outcomes • facilitate and conduct small group training sessions • relate to people from a range of social, cultural, physical and mental backgrounds |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Utilize Specialized Communication Skills |
| Unit Code | TRD LMS4 22 0215 |
| Unit Descriptor | This unit covers the knowledge, skills and attitudes required to use specialized communication skills to meet specific needs of internal and external clients, conduct interviews, facilitate group discussions, and contribute to the development of communication strategies. |

| Elements | Performance Criteria |
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| 1. Meet common and specific communication needs of clients and colleagues | <p>1.1 Specific communication needs of clients and colleagues are identified and met.</p> <p>1.2 Different approaches are used to meet communication needs of clients and colleagues.</p> <p>1.3 Conflict is addressed promptly and in a timely way and in a manner which does not compromise the standing of the organization.</p> |
| 2. Contribute to the development of communication strategies | <p>2.1 Strategies for internal and external dissemination of information are developed, promoted, implemented and reviewed as required.</p> <p>2.2 Channels of communication are established and reviewed regularly.</p> <p>2.3 Coaching in effective communication is provided.</p> <p>2.4 Work related network and relationship are maintained as necessary.</p> <p>2.5 Negotiation and conflict resolution strategies are used where required.</p> <p>2.6 Communication with clients and colleagues is made appropriate to individual needs and organizational objectives.</p> |
| 3. Represent the organization | <p>3.1 When participating in internal or external fora, presentation is made relevant, appropriately researched and presented in a manner to promote the organization.</p> <p>3.2 Presentation is made clear and sequential and delivered within a predetermined time.</p> <p>3.3 Appropriate media is utilized to enhance presentation.</p> <p>3.4 Differences in views are respected.</p> <p>3.5 Written communication is made consistent with organizational standards.</p> <p>3.6 Inquiries are responded in a manner consistent with organizational standard.</p> |

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| 4. Facilitate group discussion | <p>4.1 Mechanisms which enhance effective group interaction are defined and implemented.</p> <p>4.2 Strategies which encourage all group members to participate are used routinely.</p> <p>4.3 Objectives and agenda are routinely set and followed for meetings and discussions.</p> <p>4.4 Relevant information is provided to group to facilitate outcomes.</p> <p>4.5 Evaluation of group communication strategies is undertaken to promote participation of all parties.</p> <p>4.6 Specific communication needs of individuals are identified and addressed.</p> |
| 5. Conduct interview | <p>5.1 A range of appropriate communication strategies are employed in interview situations.</p> <p>5.2 Different types of interview are conducted in accordance with the organizational procedures.</p> <p>5.3 Records of interviews are made and maintained in accordance with organizational procedures.</p> <p>5.4 Effective questioning, listening and nonverbal communication techniques are used to ensure that required message is communicated.</p> |

| Variable | Range |
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| Strategies | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Recognizing own limitations • Utilizing techniques and aids • Providing written drafts • Verbal and non verbal communication |
| Effective group interaction | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Identifying and evaluating what is occurring within an interaction in a non-judgmental way • Using active listening • Making decision about appropriate words, behavior • Putting together response which is culturally appropriate • Expressing an individual perspective • Expressing own philosophy, ideology and background and exploring impact with relevance to communication |
| Interview situations | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Establish rapport • obtain facts and information • Facilitate resolution of issues • Develop action plans • Diffuse potentially difficult situation |
| Types of Interview | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Related to staff issues • Routine • Confidential |

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| | <ul style="list-style-type: none"> • Evidential • Non-disclosure • Disclosure |
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| Evidence Guide | |
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| Critical Aspects of Competence | Demonstrates skills and knowledge to: <ul style="list-style-type: none"> • Demonstrate effective communication skills with clients and work colleagues accessing service • Adopt relevant communication techniques and strategies to meet client particular needs and difficulties |
| Underpinning Knowledge and Attitudes | Demonstrates knowledge of: <ul style="list-style-type: none"> • communication process • dynamics of groups and different styles of group leadership • communication skills relevant to client groups |
| Underpinning Skills | Demonstrates skills of: <ul style="list-style-type: none"> • full range of communication techniques including: <ul style="list-style-type: none"> ➤ active listening ➤ feedback ➤ interpretation ➤ role boundaries setting ➤ negotiation ➤ establishing empathy ➤ communication strategies • communicate to fulfill job roles as specified by the organization |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Manage Micro, Small and Medium Enterprises (MSMEs) |
| Unit Code | TRD LMS4 23 0215 |
| Unit Descriptor | This unit covers knowledge, skills and attitude required in running Micro, Small and Medium enterprises. The strategies involve developing, monitoring and managing work activities and financial information, developing effective work habits, and adjusting work schedules as needed. |

| Elements | Performance Criteria |
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| 1. Develop and communicate Strategic work plan | <p>1.1 The importance of planning is sensitized before acting and about the importance of plans to reduce risks and to inhibit impulsive actions and discussed.</p> <p>1.2 The basics of planning and beginning with goal setting are communicated.</p> <p>1.3 The achievement of measurable and realistic short-term business objective is addressed.</p> <p>1.4 How to develop realistic activities plans and schedule is discussed.</p> <p>1.5 Major components of work plan are introduced and understood.</p> <p>1.6 The importance of constant reviewing their plans is understood by monitoring the results.</p> |
| 2. Identify daily work requirements and Develop effective work habits | <p>2.1 Basic concept about effect working culture is discussed and understood.</p> <p>2.2 Different approaches to work culture are developed and understood.</p> <p>2.3 Work requirements are identified for a given time period by taking into consideration of resources and constraints.</p> <p>2.4 Work activities are prioritized based on business needs, requirements and deadlines.</p> <p>2.5 If appropriate, work is allocated to relevant staff or contractors to optimize efficiency.</p> <p>2.6 Work and personal priorities are identified and a balance is achieved between competing priorities using appropriate time management strategies.</p> <p>2.7 Input is sought from internal and external sources and used to develop and refine new ideas and approaches.</p> <p>2.8 Business or inquiries is/are responded to promptly and effectively.</p> <p>2.9 Information is presented in a format appropriate to the industry and audience.</p> |

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| <p>3. Manage Marketing of MSMEs</p> | <p>3.1 Information on market and business needs is analyzed and market opportunities identified.</p> <p>3.2 Marketing mix and components are evaluated.</p> <p>3.3 Marketing mix for specific target market is determined.</p> <p>3.4 Marketing mix is monitored and continual adjusted against marketing performance.</p> |
| <p>4. Manage Human Resources</p> | <p>4.1 Human resource rules, regulations law and procedures are identified and determined.</p> <p>4.2 The existing human resource is audited, and gaps are identified.</p> <p>4.3 Recruitment and selection are conducted based on the organizational requirements.</p> <p>4.4 Selected candidates are oriented and placed for the appropriate position.</p> <p>4.5 Appraisal of employees' performance is conducted.</p> <p>4.6 Appraisal result is used for training and development, promotion, compensation, disciplinary measures and other purposes as required.</p> <p>4.7 Employee relations are maintained.</p> |
| <p>5. Manage production and Operation</p> | <p>5.1 Production /operation plan is developed and implemented.</p> <p>5.2 Required inputs are purchased and adequate inventories maintained.</p> <p>5.3 Production /operation process is checked and controlled.</p> <p>5.4 Quality control is applied and maintained.</p> |
| <p>6. Maintain financial records and use for decision making</p> | <p>6.1 The objective and benefits of financial records are discussed and understood.</p> <p>6.2 Asset, liabilities and capital are identified and recorded.</p> <p>6.3 Balance sheet and different journals are discussed.</p> <p>6.4 Business transactions are discussed, analyzed, classified and recorded.</p> <p>6.5 Daily financial records are maintained correctly in accordance with legal and accounting requirements.</p> <p>6.6 Invoices and payments are prepared and distributed in timely manner and in accordance with legal requirements.</p> <p>6.7 Outstanding accounts are collected or followed-up.</p> <p>6.8 Revenue, expense and costs are identified and discussed.</p> <p>6.9 Different ledgers and subsidiary ledgers are discussed and maintained.</p> <p>6.10 Profit and loss report is prepared.</p> <p>6.11 Financial interpretation is conducted with assistant from the</p> |

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| | appropriate person. |
| | 6.12 Financial manual is prepared. |
| 7. Monitor, Manage and Evaluate work performance | <p>7.1 People, resources and/or equipment are coordinated to provide optimum results.</p> <p>7.2 Staff, clients and/or contractors are communicated within a clear and regular manner, to monitor work in relation to business goals or timelines.</p> <p>7.3 Problem solving techniques are applied to work situations to overcome difficulties and achieve positive outcomes.</p> <p>7.4 Opportunities for improvements are monitored according to business demands.</p> <p>7.5 Work schedules are adjusted to incorporate necessary modifications to existing work and routines or changing needs and requirements.</p> <p>7.6 Proposed changes are clearly communicated and recorded to aid in future planning and evaluation.</p> <p>7.7 Relevant codes of practice are used to guide an ethical approach to workplace practices and decisions.</p> |

| Variable | Range |
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| Major components of work plan | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Objective • Responsibilities • Resources (human, materials, finance, time, etc) • Activities |
| Resources | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Human resource • Money • Time • Machines • Equipment • Space |
| Time management strategies | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Prioritizing and anticipating • Short term and long term planning and scheduling • Creating a positive and organized work environment • Clear timelines and goal setting that is regularly reviewed and adjusted as necessary • Breaking large tasks into smaller tasks • Getting additional support if identified and necessary |
| Internal and external sources | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Staff and colleagues • Management, supervisors, advisors or head office • Relevant professionals such as lawyers, accountants, management consultants • Professional associations |
| Human resource | <p>May include but is not limited to:</p> |

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| rules , regulations law and procedures | <ul style="list-style-type: none"> • Recruitment and selection • Orientation and placement • Training and development • Performance appraisal and reward system • Disciplinary procedures • Movement and separation • Industrial relation |
| Employee relations | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Relationship within employees • Relationship among employees and management and labor union • Relationship between labor union and government |
| Business goals | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Sales targets • Budgetary targets • Team and individual goals • Production targets • Reporting deadlines |
| Problem solving techniques | <p>May include but is not limited to:</p> <ul style="list-style-type: none"> • Brainstorming • Fish bone • Focus group discussion • Problem tree |

Evidence Guide

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| Critical Aspects of Competence | <p>A person must be able to demonstrate:</p> <ul style="list-style-type: none"> • Ability to identify daily work requirements and allocate work appropriately • Ability to interpret financial documents in accordance with legal requirements • The ability to prepare strategic plan • The ability to develop effective work habit • The ability to manage marketing of MSEs • The ability to manage human resources of MSEs • the ability to manage production/operation of MSEs • The ability to maintain financial records of MSEs • The ability to manage, monitor and evaluate work performance of MSMEs |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Strategic plan • Working culture • Time management strategy • Marketing Mix • Relevant marketing, operation/production, human resource and financial management • Human resource functions • Production/operation functions • Monitoring and evaluation • Problem solving techniques |

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| | <ul style="list-style-type: none"> • Federal and Local Government legislative requirements affecting business operations, especially in regard to Occupational Health and Safety (OHS), equal employment opportunity, industrial relations and anti-discrimination • Relevant industry code of practice • Planning techniques to establish realistic timelines and priorities • Identification of relevant performance measures • Quality assurance principles and methods |
| Underpinning Skills | <p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • Technical or specialist skills relevant to the business operation • Interpret legal requirements, company policies and procedures and immediate, day-to-day demands • Strategic planning skills • Human relation skills • Communicate using questioning, clarifying, reporting, and giving and receiving constructive feedback • Numeracy skills for performance information, setting targets and interpreting financial documents and reports • Technical skills to interpret business document, reports and financial statements and projections • Relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities • Solve problem and develop contingency plans • Using computers and software packages to record and manage data and to produce reports • Evaluate using assessment work and outcomes • Observe for identifying appropriate people, resources and to monitor work |
| Resource Implications | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level IV | |
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| Unit Title | Apply Problem Solving Techniques and Tools |
| Unit Code | TRD LMS4 24 0215 |
| Unit Descriptor | This unit of competency covers the knowledge, skills and attitude required to apply scientific problem solving techniques and tools to enhance quality, productivity and other kaizen elements on continual basis. |

| Elements | Performance criteria |
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| 1. Identify and select theme/problem. | <p>1.1 Safety requirements are followed in accordance with safety plans and procedures.</p> <p>1.2 All possible problems related to the process /Kaizen elements are listed using statistical tools and techniques.</p> <p>1.3 All possible problems related to kaizen elements are identified and listed on Visual Management Board/Kaizen Board.</p> <p>1.4 Problems are classified based on obviousness of cause and action.</p> <p>1.5 Critical factors like the number of customers affected, Potentials for bottlenecks, and number of complaints etc... is selected.</p> <p>1.6 Problems related to priorities of Kaizen Elements are given due emphasis and selected.</p> |
| 2. Grasp current status and set goal. | <p>2.1 The extent of the problem is defined.</p> <p>2.2 Appropriate and achievable goal is set.</p> |
| 3. Establish activity plan. | <p>3.1 The problem is confirmed.</p> <p>3.2 High priority problem is selected.</p> <p>3.3 The extent of the problem is defined.</p> <p>3.4 Activity plan is established as per 5W1H.</p> |
| 4. Analyze causes of a problem. | <p>4.1 All possible causes of a problem are listed.</p> <p>4.2 Cause relationships are analyzed using 4M1E.</p> <p>4.3 Causes of the problems are identified.</p> <p>4.4 Root causes are selected.</p> <p>4.5 The root cause which is most directly related to the problem is selected.</p> <p>4.6 All possible ways are listed using creative idea generation to eliminate the most critical root cause.</p> <p>4.7 The suggested solutions are carefully tested and evaluated for potential complications.</p> |

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| | 4.8 Detailed summaries of the action plan are prepared to implement the suggested solution. |
| 5. Examine countermeasures and their implementation. | 5.1 Action plan is implemented by medium KPT members. 5.2 Implementation is monitored according to the agreed procedure and activities are checked with preset plan. |
| 6. Assess effectiveness of the solution. | 6.1 Tangible and intangible results are identified. 6.2 The results are verified over time. 6.3 Tangible results are compared with targets using various types of diagram . |
| 7. Standardize and sustain operation. | 7.1 If the goal is achieved, the new procedures are standardized and made part of daily activities. 7.2 All employees are trained on the new Standard Operating Procedures (SOPs) . 7.3 SOP is verified and followed by all employees. 7.4 The next problem is selected to be tackled by the team. |

| Variables | Range |
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| Safety requirements | may include but not limited to: <ul style="list-style-type: none"> • OHS requirements include legislation, material safety, managements system, hazardous substances and dangerous goods code and local safe operating procedures • Work is carried out in accordance with legislative obligations, environmental legislations, relevant health regulation, manual handling procedure and organization insurance requirements |
| Statistical tools and techniques | may include but not limited to: <ul style="list-style-type: none"> • 7 QC tools may include: <ul style="list-style-type: none"> ➢ Stratification ➢ Pareto Diagram ➢ Cause and Effect Diagram ➢ Check Sheet ➢ Control Chart/Graph ➢ Histogram ➢ Scatter Diagram • QC techniques may include: <ul style="list-style-type: none"> ➢ Brain storming ➢ Why analysis ➢ What if analysis ➢ 5W1H |
| Kaizen Elements | may include but not limited to: <ul style="list-style-type: none"> • Quality • Cost • Productivity • Delivery • Safety |

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| | <ul style="list-style-type: none"> • Moral • Environment • Gender equality |
| 5W1H | <p>may include but not limited to:</p> <ul style="list-style-type: none"> • Who: person in charge • Why: objective • What: item to be implemented • Where: location • When: time frame • How: method |
| 4M1E | <p>may include but not limited to:</p> <ul style="list-style-type: none"> • Man • Machine • Method • Material and • Environment |
| Creative idea generation | <p>may include but not limited to:</p> <ul style="list-style-type: none"> • Brainstorming • Exploring and examining ideas in varied ways • Elaborating and extrapolating • Conceptualizing |
| Medium KPT | <p>may include but not limited to:</p> <ul style="list-style-type: none"> • 5S • 4M (machine, method, material and man) • 4P (Policy, procedures, People and Plant) • PDCA cycle • Basics of IE tools and techniques |
| Tangible and intangible results | <p>may include but not limited to:</p> <ul style="list-style-type: none"> • Tangible result may include: <ul style="list-style-type: none"> ➢ Quantifiable data • Intangible result may include: <ul style="list-style-type: none"> ➢ Qualitative data |
| Various types of diagram | <p>may include but not limited to:</p> <ul style="list-style-type: none"> • Line graph • Bar graph • Pie-chart • Scatter diagram • Affinity diagram |
| Standard Operating Procedures (SOPs) | <p>may include but not limited to:</p> <ul style="list-style-type: none"> • The customer demand • The most efficient work routine (steps) • The cycle times required to complete work elements • All process quality checks required to minimize defects/errors • The exact amount of work in process required |

Evidence Guide

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| Critical Aspects of Assessment | <p>Demonstrates skills and knowledge competencies to:</p> <ul style="list-style-type: none"> • Apply all relevant procedures and regulatory requirements |
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| | <p>to ensure quality and productivity of an organization.</p> <ul style="list-style-type: none"> • Detect non-conforming products/services in the work area • Apply effective problem solving approaches/strategies. • Implement and monitor improved practices and procedures • Apply statistical quality control tools and techniques. |
| Underpinning Knowledge and Attitude | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • QC story/PDCA cycle/ • QC story/ Problem solving steps • QCC techniques • 7 QC tools • Basic IE tools and techniques. • SOP • Quality requirements associated with the individual's job function and/or work area • Workplace procedures associated with the candidate's regular technical duties • Relevant health, safety and environment requirements • organizational structure of the enterprise • Lines of communication • Methods of making/recommending improvements. • Reporting procedures |
| Underpinning Skills | <p>Demonstrates skills to:</p> <ul style="list-style-type: none"> • Apply problem solving techniques and tools • Apply statistical analysis tools • Apply Visual Management Board/Kaizen Board. • Detect non-conforming products or services in the work area • Document and report information about quality, productivity and other kaizen elements. • Contribute effectively within a team to recognize and recommend improvements in quality, productivity and other kaizen elements. • Implement and monitor improved practices and procedures. • Organize and prioritize activities and items. • Read and interpret documents describing procedures • Record activities and results against templates and other prescribed formats. |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

NTQF Level V

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Plan, Coordinate and Maintain legal metrology Systematic Approach |
| Unit Code | TRD LMS5 01 0215 |
| Unit Descriptor | This unit describes the performance outcomes, skills and knowledge required to effectively participate in the coordination and maintenance of a systematic approach to managing the Occupation in the workplace. |

| Elements | Performance Criteria |
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| 1. Contribute to the strategic planning process | <p>1.1 Steps are taken to ensure that managers at all levels are aware of their responsibilities and the role in the overall management approach.</p> <p>1.2 Manager needs and priorities are determined in consultation with relevant managers and other workplace stakeholders and key personnel.</p> <p>1.3 Recommendations are made for inclusion performance including Positive Performance Indicators (PPI) in the organization's business plan.</p> |
| 2. Participate in the development of a legal metrology plan | <p>2.1 Potential motivators are identified among stakeholders together with potential barriers to the implementation of a systematic approach to managing metrology.</p> <p>2.2 Plan is developed in consultation with workplace stakeholders based on agreed priorities and with measurable outcomes.</p> <p>2.3 Resources required are identified for implementation of the legal metrology plan.</p> <p>2.4 Action plans are developed with relevant responsibilities and time lines.</p> <p>2.5 Action plans are communicated to key personnel.</p> |
| 3. Support the implementation of the systematic approach to managing legal metrology | <p>3.1 Knowledge of legal metrology management and legal metrology disciplines is applied in consultation with stakeholders, legal metrology technician and technical advisors, to the development of policies and procedures</p> <p>3.2 Support is provided to managers to meet legal metrology responsibilities and action plans implemented.</p> <p>3.3 Strategies are developed to effectively integrate metrology within other functional areas and management systems that impact on the management of legal metrology</p> <p>3.4 Metrology training needs are identified and recommendations formulated for delivery.</p> |
| 4. Provide advice to | <p>4.1 Objective advice is provided in an ethical and non-</p> |

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| key personnel and stakeholders | discriminating manner. 4.2 Situations are identified where legal metrology technician may be required. |
| 5. Participate in monitoring legal metrology | 5.1 Implications are identified for the management of metrology and proposed changes to the workplace in consultation with stakeholders 5.2 Implications are identified for the management of metrology, external changes and changes to available information and data in consultation with stakeholders 5.3 Sources of workplace information and data are accessed as part of regular monitoring of legal metrology. 5.4 Achievement is monitored against action plans and plans are updated as appropriate. 5.5 Action is taken to update systematic approaches to manage legal metrology by taking into account proposed changes. |
| 6. Participate in reviewing the management of legal metrology | 6.1 The effectiveness of systematic approaches is regularly reviewed to manage legal metrology. 6.2 Frequency, method and scope of review are determined in consultation with stakeholders 6.3 Stakeholders are provided with input to the review. 6.4 Targets are identified for improvement in the management of metrology and recommendations made for improvement. 6.5 Appropriate levels of authority through planning, documentation and implementation, improvement strategies arising are communicated to from the review. |

| Variable | Range |
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| Stakeholders | May include: <ul style="list-style-type: none"> • employees • managers • legal metrology committees • Supervisors • Traders • Communities |
| Key personnel | May include: <ul style="list-style-type: none"> • managers from other areas • people involved in metrology decision making or who are likely to be impacted by decisions relating to legal metrology. |
| Positive Performance Indicators | May include: <ul style="list-style-type: none"> • data, facts or statistics which demonstrate how successfully a workplace is performing through measuring legal metrology processes |
| Motivators | May include: <ul style="list-style-type: none"> • factors that make stakeholders likely to adopt legal metrology processes |

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| Barriers to the implementation of a systematic approach to managing legal metrology | <p>May include:</p> <ul style="list-style-type: none"> • barriers to communication, such as language/literacy • diversity of workers • structural factors, such as multiple locations, shift work and supervisory arrangements • workplace culture issues, such as management commitment, supervisors' approach to compliance and acceptance of the priority of safety • comprehensive processes that are combined in a methodical and ordered manner to minimise the risk of injury or ill health in the workplace • processes of: <ul style="list-style-type: none"> ➢ allocation of resources ➢ communication and consultation ➢ hazard management ➢ planning ➢ record keeping and reporting ➢ review and evaluation for ongoing improvement ➢ training and competency |
| Plan | <p>May include:</p> <ul style="list-style-type: none"> • a document that is usually developed annually but may be developed for a shorter or longer period and reviewed regularly • legal metrology performance indicators (i.e. objectives and targets that are achievable and practical) reflecting systematic approaches to managing legal metrology |
| Resources | <p>May include:</p> <ul style="list-style-type: none"> • financial requirement for implementation • personnel, including time allocation • equipment • specialised resources • access to other resources such as: <ul style="list-style-type: none"> ➢ legal metrology publications ➢ legal metrology internal sites ➢ industry-specific information |
| Legal metrology technician | <p>May include:</p> <ul style="list-style-type: none"> • physicist • engineers |
| Technical advisors | <p>May include:</p> <ul style="list-style-type: none"> • engineers (such as design, acoustic, safety, mechanical and civil) • legal practitioners • maintenance and trades persons • workplace assessors and trainers |
| Policies and procedures | <p>May include:</p> <ul style="list-style-type: none"> • documents describing how tasks, projects, inspections, jobs and processes are to be undertaken • job/task statements • policies and procedures underpinning the management of legal metrology |

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| | <ul style="list-style-type: none"> • purchasing and contracting procedures • quality system documentation • standard operating procedures |
| Other functional areas and management systems | <p>May include:</p> <ul style="list-style-type: none"> • engineering and maintenance • environmental management • finance and auditing • human resources, industrial relations and personnel management including payroll • information, data and records management • logistics • purchasing, procurement and contracting • quality management • strategic planning |
| Advice | <p>May include:</p> <ul style="list-style-type: none"> • advice provided with the prime aim of reduction of fraud of measurement |
| Proposed changes to the workplace | <p>May include:</p> <ul style="list-style-type: none"> • changes to management practices • changes to work processes, work systems, work organisation, work practices and conditions • design of workplace • design or purchase of new plant or equipment • materials purchases |
| External changes | <p>May include:</p> <ul style="list-style-type: none"> • changes to legislation • new information and data available on metrology |
| Sources of workplace information and data | <p>May include:</p> <ul style="list-style-type: none"> • audits • hazard, incident and investigation reports • Material Safety Data Sheets (MSDSs) and registers • minutes of meetings • questionnaire information and data • reports - including those from external consultants • workplace inspections |

Evidence Guide

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| Critical Aspects of Competence | <p>Must demonstrate knowledge and skills on:</p> <ul style="list-style-type: none"> • participation in organisational coordination and maintenance of legal metrology and associated systematic approaches • relevant legal metrology legislation (acts, regulations, codes of practice, associated standards and guidance material) |
| Underpinning Knowledge and Attitudes | <p>demonstrate knowledge of:</p> <ul style="list-style-type: none"> • legislative requirements for legal metrology information and data, and consultation • roles and responsibilities in relation to communication and consultation for legal metrology committees, legal metrology representatives, line management, employees and inspectors |

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| | <ul style="list-style-type: none"> • requirements for record keeping that addresses legal metrology, privacy and other legislation • state/regional and local legal metrology legislation (acts, regulations, codes of practice, associated standards and guidance material) including prescriptive and performance approaches and links to other relevant legislation such as industrial relations, equal employment opportunity, workers compensation, rehabilitation • roles and responsibilities under legal metrology legislation of employees, including supervisors and contractors • structure and forms of legislation including regulations, codes of practice, associated standards and guidance material • difference between common law and statutory law • concept of common law duty of care • facilitation of the use of tools such as PPIs in assessment of legal metrology performance • nature of information and data that provides valid and reliable results on performance of legal metrology management processes (including positive indicators, such as number of safety audits conducted) • requirements for reporting under legal metrology and other relevant legislation including notification and reporting of incidents • hierarchy of control and considerations for choosing between different control measures, such as possible inadequacies of particular control measures • other functional areas that impact on the management of legal metrology • auditing methods and techniques • how the characteristics and composition of the workforce impact on risk and the systematic approach to managing legal metrology, for example: <ul style="list-style-type: none"> ➢ labor market changes ➢ structure and organization of workforce e.g. part-time, casual and contract workers, shift rosters, geographical location ➢ language, literacy and numeracy ➢ communication skills ➢ cultural background/workplace diversity ➢ gender ➢ workers with specific needs |
| Underpinning skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • analytical skills to: <ul style="list-style-type: none"> ➢ identify areas for legal metrology improvement ➢ analyze relevant workplace information and data, and make observations of workplace tasks and interactions between people, their activities, equipment, environment and systems ➢ contribute to the assessment of the resources needed to systematically manage legal metrology and, where appropriate, access resources |

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| | <ul style="list-style-type: none"> ➤ numeracy skills to carry out simple arithmetical calculations (e.g. % change), and to produce graphs of workplace information and data to identify trends and recognise limitations • communication skills to: <ul style="list-style-type: none"> ➤ conduct effective formal and informal meetings and to communicate effectively with personnel at all levels of the organization, legal metrology specialists and, as required, emergency services personnel ➤ prepare reports for a range of target groups including legal metrology committee, legal metrology representatives, managers and supervisors ➤ consultation and negotiation skills to develop plans, and to implement and monitor designated actions ➤ project management skills to achieve change in I matters ➤ organizational skills to manage own tasks within a timeframe ➤ information technology skills to access internal and external information and data on legal metrology |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and legal metrology practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Implement and Maintain Verification Laboratory Management System |
| Unit Code | TRD LMS5 02 0215 |
| Unit Descriptor | This unit describes the performance outcomes, skills and knowledge required to effectively implement and maintain verification laboratory management system through continuous improvement. |

| Elements | Performance Criteria |
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| 1. Develop laboratory management system | <p>1.1 Priorities and scopes of the system are planned and identified.</p> <p>1.2 Quality manual, procedures, all necessary records and documents required for the laboratory management system are prepared.</p> |
| 2. Implement laboratory management system | <p>2.1 All personnel are trained in the laboratory.</p> <p>2.2 The system is exercised accordingly in to the routine operations.</p> |
| 3. Sustain the system | <p>3.1 Internal audit is scheduled as per the standard requirement.</p> <p>3.2 Internal quality audit is performed.</p> <p>3.3 Non-conformances traced during internal quality audits are identified and prioritised.</p> <p>3.4 Corrective action on non-conformances is taken accordingly</p> |

| Variable | Range |
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| Scope | <p>May include:</p> <ul style="list-style-type: none"> • Range of measurements in measuring equipment • Type of equipment • Parts of the laboratory |
| Quality manual | May include the organization policy, quality policies, articles in the international standards and organizational standards. |
| Procedures | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Working procedure • Verification procedure • Regulatory |
| Records and documents | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • Personnel CV • Purchase records • Equipment records • Calibration certificates • Verification certificate • Verification schedule • Environmental condition records |

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| Training | <p>May include the following but not limited to:</p> <ul style="list-style-type: none"> • International standards • Quality manual • Working procedures • Work instructions • Laboratory's quality policy |
| Internal Audit | <p>May include the assessment of whole laboratory management system to against the standard requirement.</p> |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Must demonstrate knowledge and skills on:</p> <ul style="list-style-type: none"> • Participation in development of laboratory management system. • Implementation of laboratory management system • Assuring quality of the implemented laboratory management system • Conduct Internal audit |
| Underpinning Knowledge and Attitudes | <p>Must demonstrate knowledge of:</p> <ul style="list-style-type: none"> • National and international standards for laboratory management system • Verification procedures for different measuring instruments • Company quality policy • Laboratory management system internal audit • Identifying non-conformances, tracing root causes and taking corrective action accordingly. • legislative requirements for legal metrology information and data, and consultation • roles and responsibilities in relation to communication and consultation for legal metrology committees, legal metrology representatives, line management, employees and inspectors • requirements for record keeping that addresses verification laboratory activities, legal metrology, privacy and other legislation • state/regional and local legal metrology legislation (acts, regulations, codes of practice, associated standards and guidance material) including prescriptive and performance approaches and links to other relevant legislation such as industrial relations, equal employment opportunity, workers compensation, rehabilitation • roles and responsibilities under legal metrology legislation of employees, including supervisors and contractors • structure and forms of legislation including regulations, codes of practice, associated standards and guidance material • facilitation of the use of tools such as PPEs in assessment of legal metrology performance • nature of information and data that provides valid and reliable results on performance of legal metrology management processes (including positive indicators, such as number of safety audits conducted) |

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| | <ul style="list-style-type: none"> • requirements for reporting under legal metrology and other relevant legislation including notification and reporting of incidents • hierarchy of control and considerations for choosing between different control measures, such as possible inadequacies of particular control measures • other functional areas that impact on the management of legal metrology • auditing methods and techniques |
| Underpinning skills | <p>Must demonstrate skills of:</p> <ul style="list-style-type: none"> • analytical skills to: <ul style="list-style-type: none"> ➢ identify areas for legal metrology improvement ➢ analyze relevant workplace information and data, and make observations of workplace tasks and interactions between people, their activities, equipment, environment and systems ➢ contribute to the assessment of the resources needed to systematically manage laboratory management system and, where appropriate, access resources ➢ numeracy skills to carry out simple arithmetical calculations (e.g. % change), and to produce graphs of workplace information and data to identify trends and recognise limitations ➢ identify non-conformances and investigate root causes ➢ taking corrective actions • communication skills to: <ul style="list-style-type: none"> ➢ conduct effective formal and informal meetings to communicate effectively with personnel at all levels of the organization, legal metrology specialists ➢ Prepare trainings for laboratory personnel regarding quality management system. ➢ Prepare non-conformance clearance reports ➢ prepare reports for a range of target groups including legal metrology committee, legal metrology representatives, managers and supervisors ➢ consultation and negotiation skills to develop plans, and to implement and monitor designated actions ➢ project management skills to achieve change in matters ➢ organizational skills to manage own tasks within a timeframe ➢ information technology skills to access internal and external information and data on verification laboratory management system |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and legal metrology practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Evaluate and Review Compliance |
| Unit Code | TRD LMS5 03 0215 |
| Unit Descriptor | <p>This unit describes the performance outcomes, skills and knowledge required to evaluate and review an organisation's compliance program/management system and how it is fulfilling its obligations and responsibilities under applicable compliance requirements.</p> <p>This unit applies to managers with responsibility for evaluating and reporting on the operation and effectiveness of an organisation's planned compliance program/management system to ensure that compliance is an integral part of normal business operations. It also applies to individuals working as an owner-manager (where it would be part of their broad role), as a senior manager in a small organisation, as an external consultant or as a section or frontline manager in an operational unit within the organisation. In addition, it applies to members of a compliance management team or a frontline manager within a larger organisation.</p> |

| Elements | Performance Criteria |
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| 1. Develop the evaluation plan | <p>1.1 Details of the organization's compliance policies, objectives and assessment criteria are obtained.</p> <p>1.2 Information on current compliance requirements applicable to the organization is obtained and interpreted.</p> <p>1.3 A suitable evaluation methodology is developed to enable sufficiently valid and reliable outcomes for the required research and suitable arrangements for both internal and external monitoring processes.</p> <p>1.4 The evaluation plan for the proposed project including the detailing of established evaluation criteria and the data to be collected is prepared.</p> <p>1.5 Approval of plan is obtained from relevant internal and/or external personnel.</p> |
| 2. Gather required evaluation data | <p>2.1 Relevant evaluation data on how the organization is fulfilling its compliance requirements are collected using appropriate techniques and sources in accordance with the agreed evaluation plan.</p> <p>2.2 Collected data are organized, interpreted and reviewed against established evaluation criteria including those specified in relevant Ethiopian and international standards.</p> <p>2.3 Ambiguities, uncertainties and problems experienced are discussed while interpreting collected data and addressed appropriately in conjunction with relevant internal and/or external personnel.</p> |

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| | 2.4 Interpreted evaluation data is organized for later analysed. |
| 3. Analyse the collected data | 3.1 Evaluation data is analyzed in accordance with planned methodology. 3.2 Outcomes and findings of the analysis are reviewed and discussed with relevant internal and/or external personnel. |
| 4. Determine evaluation findings and outcomes | 4.1 Preliminary findings and any identified issues are developed and discussed with relevant internal and/or external personnel. 4.2 Any additional data collection and analysis required to clarify aspects of findings, issues and related action options are undertaken if necessary. 4.3 Recommendations for any action are prepared to improve identified deficiencies in conjunction with relevant internal and/or external personnel. |
| 5. Document and disseminate the outcomes and recommendations of the evaluation | 5.1 A draft report of the outcomes, findings and recommendations of the compliance evaluation is prepared in accordance with the agreed structure and format and distribute to relevant internal and/or external personnel for comment and feedback. 5.2 The report is edited based on the feedback obtained. 5.3 The report is proofread in preparation for publishing. 5.4 The report of outcomes, findings and recommendations of the evaluation is signed off by authorized personnel . 5.5 The report is produced and disseminated to nominated internal and external personnel in accordance with agreed arrangements. |

| Variable | Range |
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| Compliance requirements | <p>may include:</p> <ul style="list-style-type: none"> • different types of external and internal compliance requirements including: <ul style="list-style-type: none"> ➤ accreditation requirements of an institute, professional organization or registration body ➤ internal policies, procedures, standards or codes of practice of an organization ➤ regulations of a state/territory, national or international regulatory authority ➤ requirements for certification under statutory licensing systems ➤ statutory standards or codes of practice • cross-industry, industry-specific and internal organisational compliance requirements in such areas as (examples in alphabetical groupings): <ul style="list-style-type: none"> ➤ anti-discrimination (including discrimination by race, sex, |

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| | <p>disability, religion, etc.), alcohol licensing (licensing regulations covering clubs, pubs, licensed premises, etc.), aviation</p> <ul style="list-style-type: none"> ➤ bankruptcy ➤ chemical use, child protection, construction, conveyancing /real estate, copyright, corporate governance, customs, credit ➤ education, electricity, environmental protection, equal opportunity ➤ financial services (including banking), fire, food hygiene, freedom of information, freight forwarding ➤ gambling, gene technology ➤ health, human rights ➤ insurance, immigration, intellectual property ➤ land management ➤ maritime, mining ➤ pharmaceuticals, patents, privacy ➤ quarantine ➤ racing, rail transport, road transport <ul style="list-style-type: none"> • safety (including cross-industry generic regulations as well as industry, equipment or product-specific sub-categories e.g. marine safety, rail safety, food safety, aviation safety, road safety, dangerous goods, construction safety, mine safety, road safety, etc.), security, sewage, superannuation • taxation, telecommunications, tobacco, trade practices and consumer protection • water supply, workers compensation, workers rehabilitation |
| Evaluation methodology | <p>may include:</p> <ul style="list-style-type: none"> • analysis of complaints recorded involving compliance requirements • analysis of feedback from clients, suppliers, internal managers and personnel • assessment of information contained in the organisation's management information system • collection of operational data • desk analysis • drafting and editing of the evaluation report • literature searches including internet searches • review of reports from relevant compliance authorities and organisations • surveys of relevant internal and external personnel including interviews, focus groups, questionnaires |
| Evaluation plan | <p>may include:</p> <ul style="list-style-type: none"> • details of the applicable compliance requirement and related evaluation criteria • evaluation methodology • milestones • personnel required including evaluation project manager, the evaluation team and those who may be consulted during the course of the evaluation activities • resource requirements and related costs |

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| | <ul style="list-style-type: none"> timelines |
| Evaluation data | <p>may include:</p> <ul style="list-style-type: none"> completed survey questionnaires documentation on feedback and complaints involving compliance requirements operational data pertinent to the fulfilment of compliance requirements published documents including papers, standards, regulations quantitative data collected from various sources records of interviews, meetings or focus group workshop outcomes records of telephone conversations written correspondence including letters, faxes, emails |
| Relevant Ethiopian and international standards | <p>may include:</p> <ul style="list-style-type: none"> Compliance programs Customer satisfaction - Guidelines for complaints handling in organizations Records management Risk management |
| Relevant internal personnel | <p>may include:</p> <ul style="list-style-type: none"> board of directors chief executive officer compliance management team (where relevant) compliance specialists at the operational level frontline managers senior management team |
| Relevant external personnel | <p>may include:</p> <ul style="list-style-type: none"> chief executive officers and managers in organisations with an interest in the compliance issues being researched legal and business advisors and consultants with expertise and interest in compliance requirements and related management systems representatives of professional associations and institutes relevant to the organisation's operations and sphere of business representatives of relevant authorities in pertinent compliance areas |
| Authorised personnel | <p>may include:</p> <ul style="list-style-type: none"> chief executive officer or manager in an organisation evaluation project manager evaluation steering committee (where applicable) nominated representative of educational institution/s or organisation/s nominated representative of professional association/s or institute/s nominated representative of regulatory authority |

Evidence Guide

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| Critical Aspects of Competence | <p>Must demonstrate knowledge and skills competences of:</p> <ul style="list-style-type: none"> • completion of project work which comprehensively evaluates how an organisation is fulfilling its compliance requirements • knowledge of evaluation methods and techniques suitable for compliance related evaluation and review. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • evaluation methods and techniques suitable for compliance related evaluation and review • sources of data relevant to compliance related evaluation and review • relevant Ethiopian and international standards including but not limited to: <ul style="list-style-type: none"> ➤ Compliance programs ➤ Customer satisfaction - Guidelines for complaints handling in organizations ➤ Records management guidelines ➤ Risk management quantitative and qualitative data analysis techniques relevant to compliance related evaluation • elements of compliance program/management systems including: <ul style="list-style-type: none"> ➤ documentation of compliance requirements relevant to the organization ➤ compliance management functions, accountabilities and responsibilities within the organization ➤ compliance related management information systems ➤ record keeping systems required for compliance management ➤ liaison procedures with relevant internal and external personnel on compliance related matters ➤ breach management policies and processes including the identification, classification, investigation, rectification and reporting of breaches in compliance requirements ➤ compliance reporting procedures ➤ corporate induction and training processes related to compliance management ➤ processes for the internal and external promulgation and promotion of information on compliance requirements and compliance program/management system ➤ compliance complaints handling systems ➤ continuous improvement processes for compliance including monitoring, evaluation and review ➤ strategies for developing a positive compliance culture within the organization ➤ techniques and performance indicators for monitoring the operation of a compliance program/management system ➤ reporting processes on compliance management including reports on breaches and rectification action • relevant organisational policies and procedures including: <ul style="list-style-type: none"> ➤ compliance plans and policies in various compliance areas ➤ organisational standards for operations and ethics. |

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| Underpinning Skills | <p>Demonstrate the following skills:</p> <ul style="list-style-type: none"> • interpersonal skills to contribute to a positive culture of compliance within an organisation • investigative skills to evaluate and review compliance • project management skills to: <ul style="list-style-type: none"> ➤ develop project plans ➤ manage other personnel involved in the evaluation activity ➤ meet project timelines ➤ manage project finances • interpersonal skills to relate to internal and external personnel and in particular those representing relevant regulatory authorities, professional institutes and organisations, standards organisations • research and evaluation skills to: <ul style="list-style-type: none"> ➤ conduct literature searches and internet searches ➤ analyze and organize evaluation data using appropriate techniques ➤ conduct various types of evaluation surveys ➤ conduct quantitative data analysis using appropriate techniques • technical skills to use communications technology effectively. |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Develop a Workplace Learning Environment |
| Unit Code | TRD LMS5 04 0215 |
| Unit Descriptor | This unit describes the performance outcomes, skills and knowledge required to encourage and support the development of a learning environment in which work and learning come together. Particular emphasis is on the development of strategies to facilitate and promote learning, and to monitor and improve learning performance. |

| Elements | Performance Criteria |
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| 1. Create learning opportunities | <p>1.1 Potential formal and informal learning opportunities are identified.</p> <p>1.2 Learning needs of individuals are identified in relation to the needs of the team and/or enterprise, and available learning opportunities.</p> <p>1.3 Learning plans are developed and implemented as an integral part of individual and team performance plans.</p> <p>1.4 Strategies are developed to ensure learning plans reflect the diversity of needs.</p> <p>1.5 Organizational procedures are ensured to maximize individual and team access, and participation, learning opportunities.</p> <p>1.6 Effective liaison is ensured to occur with training and development specialists and contributed to learning opportunities which enhance individual; team and organizational performance.</p> |
| 2. Facilitate and promote learning | <p>2.1 Strategies are developed to ensure workplace learning, opportunities used and team members encouraged to share their skills and knowledge to encourage a learning culture within the team.</p> <p>2.2 Organizational procedures are implemented to ensure workplace learning opportunities contribute to the development of appropriate workplace knowledge, skills and attitudes.</p> <p>2.3 Policies and procedures are implemented to encourage team members to assess their own competencies, and their own learning and development needs are identified.</p> <p>2.4 The benefits of learning is shared with others in the team and organization</p> <p>2.5 Workplace achievement, appropriate recognition, feedback and rewards are recognized timely.</p> |

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| 3. Monitor and improve learning effectiveness | <p>3.1 Strategies are used to ensure that team and individual learning performance is monitored to determine the type and extent of any additional work-based support.</p> <p>3.2 Feedback from individuals and teams is used to identify and improvements are introduced in future learning arrangements.</p> <p>3.3 Adjustments negotiated with training and development specialists are made for improvements to the efficiency and effectiveness of learning.</p> <p>3.4 Processes are used to ensure records and reports of competency documented and maintained within the organization's systems and procedures to inform future planning.</p> |
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| Variables | Range |
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| Learning opportunities | <p>May include:</p> <ul style="list-style-type: none"> • structured learning activities conducted outside and within the workplace such as: <ul style="list-style-type: none"> ➤ accredited training through an independent organization such as a legal metrology officers authority ➤ action learning ➤ short courses ➤ Ethiopian Qualifications Framework (AQF) qualification or Statement of Attainment ➤ workshops • workplace learning activities, that may also contribute to a recognised credential, such as: <ul style="list-style-type: none"> ➤ coaching ➤ exchange/rotation ➤ induction ➤ mentoring ➤ shadowing |
| Learning needs | <p>May include:</p> <ul style="list-style-type: none"> • developmental learning, for example the learning required to progress through an organisation and take on new tasks and roles • gaps between the competencies held by the employee, and the skills and knowledge required to effectively undertake workplace tasks |
| Learning plans | <p>May include:</p> <ul style="list-style-type: none"> • codes of conduct • key performance indicators • negotiated agreement with individual/s • legal metrology officers requirements • performance standards • team competencies • team roles and responsibilities • work outputs and processes |

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| Diversity of needs | <p>May include:</p> <ul style="list-style-type: none"> learning needs that relate to social, cultural and other types of workplace diversity, such as the need for varied communication styles and approaches |
| Training and development specialists | <p>May include:</p> <ul style="list-style-type: none"> internal external |
| Encourage a learning culture | <p>May refer to:</p> <ul style="list-style-type: none"> encouraging learning and sharing skills and knowledge across the work team and the wider organisation to develop competencies of individual team members and the team as a whole |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Evidence of the following is essential:</p> <ul style="list-style-type: none"> methods for reviewing performance development needs and techniques for providing feedback on those needs models for planning professional development options available for professional development knowledge of relationship management required to achieve a learning environment |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> management of relationships to achieve a learning environment principles and techniques involved in the management and organisation of: <ul style="list-style-type: none"> adult learning coaching and mentoring consultation and communication improvement strategies leadership learning environment and learning culture monitoring and reviewing workplace learning problem identification and resolution record keeping and management methods structured learning work-based learning |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> communication skills to: <ul style="list-style-type: none"> deal with people openly and fairly encourage colleagues to share their knowledge and skills gain the trust and confidence of colleagues use consultation skills effectively literacy skills to access and use workplace information planning and organisational skills to facilitate, promote and monitor learning by: <ul style="list-style-type: none"> developing learning plans establishing a workplace which is conducive to learning |

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| | <ul style="list-style-type: none"> ➤ evaluating the effectiveness of learning ➤ identifying learning needs ➤ negotiating learning arrangements with training and development specialists ➤ selecting and using work activities to create learning opportunities ➤ using coaching and mentoring to support learning |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written exam • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the workplace or in a simulated workplace setting |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Meet Statutory and Organisation Information Requirements |
| Unit Code | TRD LMS5 05 0215 |
| Unit Descriptor | This unit describes the knowledge and skills required to ensure effectiveness and efficiency of the organisation's information system. |

| Elements | Performance Criteria |
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| 1. Identify information requirements | <p>1.1 Information requirements are identified in relation to organisation and worker goals, objectives and expected outcomes.</p> <p>1.2 Data on information needs are collected, analysed and prepared in ways to inform decision –making.</p> |
| 2. Review options for systems to obtain information | <p>2.1 Sources of information are identified and periodically evaluated.</p> <p>2.2 Options for information systems are identified, evaluated and prepared to contribute to users' development.</p> <p>2.3 Financial and technological resources required for systems are identified and evaluated.</p> |
| 3. Establish and manage systems to record and store information | <p>3.1 Methods used are periodically re-evaluated to record and store information for effectiveness, efficiency, security and integrity and new methods are introduced as necessary.</p> <p>3.2 Any substantial breakdowns are analysed in methods of recording, storing and accessing information for cause and effect and corrective action is taken.</p> <p>3.3 Systems are established and implemented to ensure availability of information especially for direct use of clients.</p> <p>3.4 Validity and usefulness of information are monitored and appropriate actions taken for disposal or storage</p> |
| 4. Support and supervise the development of information and educational resources | <p>4.1 Content and format guidelines are developed in consultation with clients and other stakeholders to guide production of education and information resources.</p> <p>4.2 Appropriate expertise is recruited to develop designated information and education resources.</p> <p>4.3 Opportunities are established for information users to monitor and advise on ongoing development of information and education resources.</p> |
| 5. Provide staff training | <p>5.1 Staff training needs are determined in relation to systems for information acquisition, recording and storage, and for preparing educational resources.</p> <p>5.2 Training or retraining is organized in accordance with the units of competency required; training needs analysis and organisation policy.</p> |

| Variable | Range |
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| Information systems | <p>May include:</p> <ul style="list-style-type: none"> • Management of a work unit/major program area established by: <ul style="list-style-type: none"> ➢ Commonwealth and state legislation ➢ Organisation policy and procedures ➢ Relevant program standards ➢ Informal and formal arrangements with government, non-government and other service providers to obtain information relating to clients and services ➢ Computer based recording systems ➢ Electronic banking |
| Financial and technological resources required | <p>May include:</p> <ul style="list-style-type: none"> • Manual filing systems • Computerised filing software and hardware |
| Information | <p>May include:</p> <ul style="list-style-type: none"> • Monitoring work output and relationship with obtaining outcomes, assessing availability of statistics to assist in monitoring workload, setting up dialogue with workers/supervisors about how to improve work practices through the use of information technology |
| Establishing systems | <p>May include:</p> <ul style="list-style-type: none"> • Assessing available technology and its application to work practices • Identifying and preparing submissions for resources needed for new systems • Identifying training needs associated with implementation of new systems and either developing training to support this or investigation of possible training service providers |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Must demonstrate knowledge and skills competence to:</p> <ul style="list-style-type: none"> • The individual being assessed must provide evidence of specified essential knowledge as well as skills • This unit is most appropriately assessed in the workplace or in a simulated workplace and under the normal range of workplace conditions This may include the use of languages other than English and alternative communications systems • Assessment must include all aspects of managing the organisation's information systems in the workplace |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • Application of information technology • Workload analysis models/systems • Operations of the agency • Relevant policy and procedures and work systems • Systems analysis models/theories • Relevant legislation relating to organisation and statutory information requirements • Range of current and emerging information technology |

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| | <p>relevant to addressing organisation information requirements</p> <ul style="list-style-type: none"> • Consultation processes and techniques • Communication dissemination models application of information technology • Workload analysis models/systems • Operations of the agency • Relevant policy and procedures and work systems • Systems analysis models/theories • Relevant legislation relating to organisation and statutory information requirements • Range of current and emerging information technology relevant to addressing organisation information requirements • Consultation processes and techniques • Communication dissemination models |
| Underpinning Skills | <p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • Assess information requirements for an organisation or department • Design work systems that integrate technology and address organisation and statutory information requirements • Design training processes to support introduction of new technology in work practices • Demonstrate knowledge of applicable agency and legislative requirements processes listed in the Range Statement • In addition, the candidate must be able to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role • Demonstrate application of skills in: <ul style="list-style-type: none"> ➢ assessment of information needs ➢ analysis ➢ planning ➢ consultation/facilitation ➢ report writing ➢ running reviews ➢ accessing/researching current emerging technology ➢ marketing technology ➢ communication/dissemination strategies |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competence may be assessed in the work place or in a simulated work place setting.</p> |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Inspect a Range of Complex Measuring Instruments |
| Unit Code | TRD LMS5 06 0215 |
| Unit Descriptor | <p>This unit of competency covers the ability to apply National Test Procedures to determine whether a complex measuring instrument is suitable for trade use. It involves the ability to perform lengthy calculations to assess instrument performance and conduct tests that may require coordination of a range of resources over long durations in hazardous environments. This unit also involves auditing the performance of verifiers who have previously tested and marked instruments for use.</p> <p>This unit of competency is applicable to trade measurement inspectors appointed under national measurement legislation who may inspect a range of complex measuring instruments as part of their allocated duties. Complex measuring instruments are used in a wide range of heavy industries. For example, automatic rail weighbridges, belt weighers, totalising hoppers and Liquid Petroleum Gas (LPG) flow meters are used throughout the mining, road/rail freight and petroleum/gas industry sectors.</p> |

| Elements | Performance Criteria |
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| 1. Prepare for inspection | <p>1.1 The type of instrument to be inspected is identified and evaluated.</p> <p>1.2 Documentation required for the inspection is accessed and correctly interpreted.</p> <p>1.3 Test equipment, products and consumables required for the inspection are identified and accessed.</p> <p>1.4 Test equipment is ensured to be suitable for its purpose in accordance with applicable legislation and organizational procedures.</p> <p>1.5 Equipment is stored and transported in accordance with organizational procedures and industry best practice.</p> <p>1.6 Any previous test results for the trader are accessed and evaluated.</p> <p>1.7 Workplace health and safety issues relevant to the inspection are identified.</p> <p>1.8 An inspection strategy is developed to maximize resources and minimize time required for complex tests.</p> |
| 2. Liaise with the trader to schedule complex tests | <p>2.1 Inspection arrangements are discussed with site controller where applicable.</p> <p>2.2 Relevant local workplace, health and safety issues are identified and appropriate control strategies implemented.</p> <p>2.3 The inspection strategy is discussed with the trader to minimize its impact on the trader's normal operations.</p> |

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| | <p>2.4 Site clearances and suitable scheduling for tests are arranged.</p> <p>2.5 Access to trader's equipment, materials and support personnel required for testing to be available on site is negotiated.</p> <p>2.6 For any equipment to be provided by the trader is arranged, if required, by the National Test Procedure.</p> |
| 3. Initiate inspection | <p>3.1 The site controller is identified, the purpose of the inspection explained/reviewed and, if required, formal identification produced.</p> <p>3.2 Inspection strategy is reviewed to ensure there is minimal disruption to the public and/or trader.</p> <p>3.3 Inspection strategy is communicated to all personnel involved.</p> <p>3.4 Locations for product return or disposal are identified if applicable.</p> <p>3.5 The impacts of the operating environment on the instrument performance or test results are evaluated and, where applicable, corrective actions implemented.</p> <p>3.6 Operational factors impacting on instrument performance or test result are identified and, where applicable, corrective actions implemented.</p> |
| 4. Evaluate complex measuring instrument performance | <p>4.1 The maximum permissible errors for the instrument are identified from the legislative requirements.</p> <p>4.2 Resources are managed and reviewed to maintain inspection timelines.</p> <p>4.3 Effective communication is provided to ensure relevant personnel are informed of variations to the inspection strategy and inspection progress.</p> <p>4.4 Instrument is checked for compliance with the appropriate Certificates of Approval.</p> <p>4.5 The instrument is inspected in accordance with relevant National Test Procedure and appropriate National Measurement Institute policy.</p> |
| 5. Analyse inspection results | <p>5.1 Specified calculations are performed to determine a performance result for the instrument with appropriate accuracy, precision and significant figures.</p> <p>5.2 Graphical and statistical analysis is used to determine unknowns as necessary.</p> <p>5.3 Calculations are ensured to be consistent with estimations and reasonable expectations.</p> <p>5.4 Results are evaluated against prescribed performance criteria and determine if the instrument is suitable for trade use in accordance with legislative requirements.</p> |

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| 6. Conduct a verifier performance audit | <p>6.1 The scope of the verifier audit is identified.</p> <p>6.2 The expected outcomes of the verifier audit are identified.</p> <p>6.3 The verifier's performance is assessed against the expected outcome.</p> <p>6.4 Any variances are analyzed from the expected outcomes to identify any isolated or systemic problems.</p> |
| 7. Report inspection results | <p>7.1 The inspection result on the instrument is displayed in accordance with legislative requirements.</p> <p>7.2 Test reports are used to present inspection results in the required format.</p> <p>7.3 Inspection records and documentation are completed in accordance with legislative requirements and organizational procedures.</p> <p>7.4 Inspection results are communicated within the specified time and in accordance with organizational guidelines.</p> <p>7.5 Follow-up actions are recommended as appropriate.</p> |
| 8. Act on non-compliance | <p>8.1 Applicable enforcement action for the non-compliance is selected in accordance with legislative requirements, organizational policy and procedures.</p> <p>8.2 Traders are informed of non-compliances and consequences of failing to have them corrected.</p> <p>8.3 Enforcement action is implemented in accordance with legislative requirements, organizational policy and procedures.</p> <p>8.4 The rights of the trader are maintained at all times.</p> |

| Variable | Range |
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| Test equipment | <p>may include:</p> <ul style="list-style-type: none"> • reference standards of measurement • equipment other than reference standards of measurement such as weighing instruments, pumping units, control instruments, two way communication, hoses, fittings, rail wagons, trains and tankers • LPG cylinders |
| National test procedures | <p>may include:</p> <ul style="list-style-type: none"> • non-automatic weighing machines >3 tonne • LPG dispensers • bulk LPG flow metering systems • flow metering systems tested using the master meter or gravimetric methods • automatic rail weighbridges • continuous totalising automatic weighing instruments (belt |

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| | <p>weighers)</p> <ul style="list-style-type: none"> totalising hopper weighing instruments any other test procedure prescribed by the National Measurement Institute |
| Legislation | <p>may include:</p> <ul style="list-style-type: none"> national measurement legislation applicable OHS legislation |
| Certificates of Approval | <p>may include:</p> <ul style="list-style-type: none"> any Certificate issued under the National Measurement Regulations approving the pattern of a complex measuring instrument as being suitable for trade |
| National Measurement Institute policy | <p>may include:</p> <ul style="list-style-type: none"> test procedure variations between a verification, in-service or audit inspection bulletin instruction determination |
| Calculations | <p>may include:</p> <ul style="list-style-type: none"> calculations involving fractions, decimals, ratios, proportions and percentages evaluation of formulae containing powers, exponents and logarithms functions use of scientific notation, correct units and correct number of significant figures calculation of uncertainties preparation and interpretation of linear, semi-log and log-log graphs calculation and interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation determination of regression line equations and correlation coefficients preparation and interpretation of more complex control charts and frequency distribution plots |
| Records | <p>may include:</p> <ul style="list-style-type: none"> test reports safety procedures a history of equipment calibration and test results |
| Enforcement action | <p>may include:</p> <ul style="list-style-type: none"> formal warnings infringement notice formal undertaking injunction <p>prosecution</p> |
| Prescribed performance criteria for instruments | <p>may include:</p> <ul style="list-style-type: none"> design is in accordance with the appropriate Certificates of Approval performance meets the criteria described in the Certificates of Approval, National Test Procedure and legislation |
| Appropriate documentation | <p>may include:</p> <ul style="list-style-type: none"> reference standards |

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| | <ul style="list-style-type: none"> • Certificates of Verification • Certificates of Approval for complex instruments • test procedures for verifying complex instruments • organisational test reports • organisational procedures e.g. company quality assurance manual • National Measurement Act • Occupational Health and Safety (OHS) regulations, guidelines and procedures material data safety sheets • equipment manuals and warranty, supplier catalogues and handbooks |
| OHS and environmental management requirements | <p>refer to:</p> <ul style="list-style-type: none"> • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through Federal legislation. These requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Nutrition Research Institute and Ministry of Health |
| Operating environmental impacts | <p>may include:</p> <ul style="list-style-type: none"> • vibration • wind • heat • dust • electromagnetic interference • out of level |
| Complex instruments | <p>may include:</p> <ul style="list-style-type: none"> • non-automatic weighing machines >3 tonne • LPG dispensers • LPG bulk flow metering systems • Flow metering systems tested using master meter or gravimetric methods • automatic rail weighbridges • continuous totalising automatic weighing instruments (belt weighers) • totalising hoppers weighing instruments • any other complex measuring instrument prescribed by the National Measurement Institute |

Evidence Guide

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| Critical Aspects of Competence | <p>Must demonstrate skills and knowledge competences to:</p> <ul style="list-style-type: none"> • identify, access and apply test procedures • identify and use suitable reference standards • evaluate and adjust the impact of the operating environment on the performance of the instrument • analyse test results to determine the instrument's suitability for verification (trade use) |
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| | <ul style="list-style-type: none"> • identify the scope of a verifier performance audit and assess results with expected outcomes • audit the performance of verifiers of complex measuring instruments • identify and implement additional inspection strategies for non-instrument related breaches of national measurement legislation • recognise and act on non-compliance • maintain the security and confidentiality of data in accordance with organisational and regulatory requirements • report results in the required formats and expected timeframe. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • general chemical and physical principles and concepts including: <ul style="list-style-type: none"> ➤ physical states (solid, liquid gas), weight, mass, gravity and density ➤ pressure, pressure differential, backpressure and head pressure ➤ fluid flow ➤ flashpoint, boiling point and ice point ➤ viscosity ➤ temperature effects and coefficients of expansion • basic knowledge of the design, application and function of components used in complex measuring instruments • knowledge of the operating procedures across a range of environments including laboratories, retail, commercial, office, manufacturing, industrial, mining, construction, medical, chemical, petroleum, farming and abattoirs • knowledge of metrological terms and terminology specific to complex measuring instruments such as: <ul style="list-style-type: none"> ➤ maximum permissible errors, maximum permissible difference and maximum permissible variation ➤ traceability ➤ repeatability ➤ uncertainty, error of measurement and error of indication ➤ meter creep ➤ hose dilation ➤ temperature correction ➤ linearisation ➤ gas elimination • national measurement legislation applicable to complex measuring instruments • detailed knowledge of National Test Procedures and operating procedures for equipment and reference standards used in job role including: <ul style="list-style-type: none"> ➤ purpose of test ➤ test conditions and possible environmental impacts on performance of the instrument ➤ key preparation/measurement steps in test method ➤ calculation steps to give results in appropriate units and precision |

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| | <ul style="list-style-type: none"> ➤ maximum permissible errors for complex measuring instruments under inspection • procedures for completing inspection documentation • organisational policy and procedures for inspecting instruments • safety principles and procedures relevant to instruments • basic first aid and site safety induction if required |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • accessing, interpreting and applying a range of documents for the inspection of complex measuring instruments including: <ul style="list-style-type: none"> ➤ national measurement legislation ➤ intermediate National Test Procedures ➤ Certificates of Approval ➤ National Measurement Institute inspection policy ➤ Ethiopian Standards ➤ industry codes of practice ➤ correction tables for volume, density and pressure for a range of liquids ➤ national and international design rules ➤ pattern approval documents • accessing and interpreting Certificates of Verification for a wide range of reference standards • performing inspection over extended durations up to five days in non-routine and hazardous environments • using advanced communication and negotiation skills to: <ul style="list-style-type: none"> ➤ explain purpose of the inspection ➤ inform traders of non-compliances and consequences of failing to rectify ➤ access external equipment and resources to complete the inspection • explain inspection procedures and outcomes to traders, verifiers and managers • accessing, transporting, setting up, validating, using and maintaining a broad range of test equipment and reference standards • identifying and evaluating environmental factors that may impact on performance of complex measuring instruments • organising large equipment to be dispatched ahead of inspection visit • conducting lengthy tests and recording results with close attention to detail and accuracy • performing complex calculations involving: <ul style="list-style-type: none"> ➤ fractions, decimals, ratios, proportions and percentages ➤ evaluation of formulae containing powers, exponents and logarithms functions ➤ use of scientific notation, correct units and correct number of significant figures ➤ calculation of uncertainties ➤ preparation and interpretation of linear, semi-log and log-log graphs |

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| | <ul style="list-style-type: none"> ➤ interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation ➤ determination of regression line equations and correlation coefficients ➤ preparation and interpretation of more complex control charts and frequency distribution plots • analysing performance results over a broad range of operating conditions • identifying non-compliances with national measurement legislation relating to instrument or verifier performance and initiate appropriate enforcement action including warning, infringement notice, undertaking, injunction and prosecution • identifying potential trading practice non-compliance with national measurement legislation and initiating an appropriate inspection strategy • planning complex tasks • developing/implementing an efficient inspection strategy that minimises disruption to traders, the public, technicians, contractors, employees, colleagues and suppliers • demonstrating professionalism and maintaining the rights of the trader at all times • solving unexpected problems and non-routine issues • working safely which may include applying basic first aid, confined space entry, working with hazardous materials, working safely in hazardous environments, working with heavy machinery, Ethiopian Institute of Petroleum (AIP) cold work clearance permit, safety induction, working at heights and biosecurity issues |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Analyse Measurements and Estimate Uncertainties |
| Unit Code | TRD LMS5 07 0215 |
| Unit Descriptor | <p>This unit of competency covers the ability to estimate and report measurement uncertainty in accordance with the ISO Guide to the Expression of Uncertainty in Measurement. Personnel are required to review their estimates of measurement uncertainty to assist with making decisions on the fitness for purpose of the measurements.</p> <p>This unit of competency is applicable to laboratory personnel who work in calibration and testing facilities and process and interpret data and are required to determine uncertainties using standard methods. The rigour required in estimating uncertainty will depend on the required accuracy of the particular calibration, test or measurement</p> <p>N.B. "Process and interpret data" is prerequisite units</p> |

| Elements | Performance Criteria |
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| 1. Identify the measured quantity and the uncertainty components | <p>1.1 An equation is specified for the measurement.</p> <p>1.2 Uncertainty components that are associated with each input in the equation are listed.</p> |
| 2. Determine the size of each uncertainty component | <p>2.1 The standard deviations and mean are calculated from the measurement results.</p> <p>2.2 Calibration reports, manufacturer's specifications, quality control and validation data, and experimental data are used to collect other available information on the uncertainty components.</p> |
| 3. Reduce each uncertainty component to a standard uncertainty | <p>3.1 An appropriate distribution is allocated for each uncertainty component.</p> <p>3.2 The standard uncertainties are calculated.</p> |
| 4. Calculate an expanded uncertainty to the required confidence level | <p>4.1 The sensitivity coefficient for each uncertainty component is calculated.</p> <p>4.2 A combined standard uncertainty is calculated.</p> <p>4.3 An appropriate coverage factor is determined based on the degrees of freedom associated with each uncertainty component.</p> <p>4.4 The expanded uncertainty is calculated.</p> |
| 5. Report the expanded uncertainty | <p>5.1 The result and uncertainty to an appropriate number of significant figures are reported.</p> <p>5.2 The confidence level and coverage factor are reported.</p> <p>5.3 The appropriateness of the size of the expanded uncertainty</p> |

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| | <p>relative to the tolerance or required accuracy of the test is determined.</p> <p>5.4 The fitness for purpose of the expanded uncertainty relative to the use of the measurement result is determined.</p> |
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| Variable | Range |
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| Calculating | may be performed with or without a calculator or computer software, such as spreadsheets, databases and statistical packages |
| Data | <p>may:</p> <ul style="list-style-type: none"> • be recorded on worksheets or entered into spreadsheets or databases linked to information management systems • include the results of tests, measurements and analyses |
| Uncertainty components | <p>may include:</p> <ul style="list-style-type: none"> • calibration uncertainty • instability or drift in the calibrated instrument • repeatability of the results • resolution or readability of the instrument • environmental influences such as temperature, air pressure, humidity, vibration, electrical noise and gravity • reference material uncertainty • factors arising from using an instrument under a different operating environment or procedures (e.g. orientation of a transducer and immersion depth of a temperature probe) • reproducibility of quality control data |
| Confidence level | The most common confidence level is 95% in accordance with the National Measurement Act, However, some applications require a higher level of confidence |
| Codes of practice | Where reference is made to industry codes of practice, and/or Ethiopian/international standards, it is expected the latest version will be used |
| Standards, codes, procedures and/or enterprise requirements | <p>may include:</p> <ul style="list-style-type: none"> • Ethiopian and international standards, such as: • The International System of units (SI) and its application • General requirements for the competence of testing and calibration laboratories • Quality management systems - Guidelines for quality plans • Measurement management systems - Requirements for measurement processes and measuring equipment • Quality management systems set • Accuracy (trueness and precision) of measurement methods and results • ISO/IEC Guide 98-3:2008 Uncertainty of measurement-Part 3 Guide to the expression of Uncertainty in Measurement (GUM) • Quantifying uncertainty in analytical measurement Guide |

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| | <ul style="list-style-type: none"> • Ethiopian code of Good Manufacturing Practice for medicinal products (GMP) • enterprise quality manual, customer quality plan • equipment manuals and warranty, supplier catalogues, handbooks • National Accreditation programs requirements • principles of Good Laboratory Practice (GLP) • national measurement regulations and guidelines • Nordtest guide • sampling and test procedures and Standard Operating Procedures (SOPs) |
| Statistical analysis | <p>may include the use of:</p> <ul style="list-style-type: none"> • standard deviation, standard deviation of the mean, histograms and frequency plots • probability and normal probability plots • control charts • regression methods for calibration, linearity checks and comparing analytical methods • analysis of variance (ANOVA) • data acceptability tests, such as T and F |
| Records | <p>may include information associated with:</p> <ul style="list-style-type: none"> • purchase of equipment and materials and service records • manufacturer's datasheets • calibration reports • history of calibration and test results |
| Occupational Health and Safety (OHS) and environmental management requirements | <p>May include:</p> <ul style="list-style-type: none"> • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Nutrition Research Institute and Ministry of Health |

Evidence Guide

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| Critical Aspects of Competence | <p>Must demonstrate skills and knowledge competences to:</p> <ul style="list-style-type: none"> • prepare a realistic uncertainty budget that is appropriate for the application • fully document the uncertainty budget • report results and uncertainties in the required formats. |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • knowledge of the steps in the measurement, test or calibration involved • evaluation of formulae containing powers, exponents, |

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| | <p>logarithms functions</p> <ul style="list-style-type: none"> • use of scientific notation, correct units and correct number of significant figures • preparation and interpretation of linear graphs • mean, standard deviation, standard deviation of the mean and degrees of freedom • significance tests such as t-test, f-test and analysis of variance (ANOVA), variances, standard deviation of prediction and linear regression (for chemical industry sector) • the difference between errors, corrections and uncertainties • uncertainty in the uncertainty estimation process • uncertainty components that are common to the use of an instrument • uncertainty components that arise due to the instrument being used under different conditions to those when it was calibrated • procedures for determining the uncertainty components associated with each of the inputs and whether they are significant and for applying appropriate corrections • manufacturer's specifications (e.g. instrument drift specification and reference materials) • procedures for determining uncertainty components from quality control data • normal, rectangular, triangular distributions and the factors used to reduce each to a standard uncertainty • the concept of degrees of freedom and how to allocate degrees of freedom to each uncertainty component including use of the Welch-Satterthwaite equation • use of the student's t-table to get a coverage factor for a particular level of confidence • the characteristics of a valid measurement • relevant reporting requirements or other applicable reference material |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • gathering information on uncertainty components from calibration reports or reference material report • making logical assumptions based on experience or experimental data • calculating sensitivity coefficients either experimentally or by partial differentiation • calculating a combined standard uncertainty using root-sum-of-squares, accounting for correlations where necessary • calculating expanded uncertainty • using spreadsheets to calculate uncertainties • deciding if the uncertainty is suitable for the accuracy required for the test and establishing whether it is fit for purpose using the tolerance to uncertainty ratio (TUR) |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |

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| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Supervise and Carry out Complex Inspections and Monitoring |
| Unit Code | TRD LMS5 08 0215 |
| Unit Descriptor | <p>This unit covers the requirements to supervise and undertake detailed, complex inspections and monitoring in accordance with relevant Acts and regulations.</p> <p>Typically work will be at an experienced, unsupervised level with responsibility in a defined area. It includes planning and coordinating of inspection and monitoring programs, supervising and carrying out of complex inspections and monitoring, acting on non-compliance relating to complex inspections and monitoring, and providing reports, information and training.</p> <p>In practice, supervision and carrying out of complex inspections and monitoring may overlap with other public sector generalist and specialist work activities such as promoting ethical practice and compliance with legislation, coordinating resources, undertaking research and analysis, etc</p> |

| Elements | Performance Criteria |
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| 1. Plan and coordinate inspection and monitoring programs | <p>1.1 Outputs and performance indicators for defined area of responsibility are identified and inspection, monitoring activities and responsibilities are assigned in accordance with organisational requirements.</p> <p>1.2 Procedures, timeframes, resources and equipment requirements for defined area of responsibility are determined in accordance with organisational and task requirements.</p> <p>1.3 Required resources/equipments are made available and the access/preparation of these supervised in accordance with organisational and task requirements.</p> <p>1.4 Legislation and regulations are interpreted and input is provided into technical protocols and operational procedures as required.</p> <p>1.5 Risk management practices, occupational health and safety and environmental requirements are interpreted and explained to staff as required.</p> |
| 2. Supervise and carry out complex inspections and monitoring | <p>2.1 Leadership is provided to deliver agreed outputs in accordance with the organisation's business requirements.</p> <p>2.2 Inspections and monitoring activities are planned and supervised, and program performance, resources and expenditure are monitored in accordance with organisational requirements.</p> <p>2.3 Compliance programs are planned, implemented and coordinated as required in accordance with set procedures and timelines.</p> |

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| | <p>2.4 Assessments and performance management of inspection/monitoring staff are conducted in accordance with organisational policies and procedures.</p> <p>2.5 Complex inspections and monitoring are carried out under general direction and contingencies dealt with in accordance with organisational policies and procedures.</p> <p>2.6 Legislative requirements, risk management practices, occupational health and safety and environmental requirements are applied in accordance with organisational requirements.</p> |
| 3. Act on non-compliance relating to complex inspections and monitoring | <p>3.1 Advice is provided on serious or complex matters referred by others, or situations resolved in accordance with organisational policy and procedures.</p> <p>3.2 Information/education is provided to achieve client compliance in accordance with organisational guidelines and legislative requirements relating to the seriousness of the possible breach.</p> <p>3.3 Further action is taken as a result of the failure to achieve compliance, in accordance with organisational guidelines and legislative requirements relating to the seriousness of the possible breach.</p> <p>3.4 Contraventions of relevant legislation are reported and recommendations for prosecutions are made in accordance with organisational policy and procedures.</p> <p>3.5 When required, court attendance and conduct requirements are fulfilled in compliance with organisational guidelines.</p> |
| 4. Provide reports, information and training | <p>4.1 Records are maintained and correspondence, submissions and reports prepared in accordance with organisational requirements.</p> <p>4.2 Legislation and regulations are interpreted and information and advice provided on policies, procedures, guidelines, technical and operational matter</p> <p>4.3 On-the-job inspection/monitoring training is supervised and provided in accordance with organisational requirements</p> |

| Variable | Range |
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| Activities | may include: <ul style="list-style-type: none"> • inspections/examinations • monitoring • surveillance • focused and benchmark audit activities • remote monitoring • other compliance assurance activities |
| Procedures | may include: <ul style="list-style-type: none"> • observation |

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| | <ul style="list-style-type: none"> • handling procedures • sampling procedures • rejection procedures • storage procedures • disinfection procedures • treatment procedures • organisational guidelines and code of conduct • incident reporting procedures • safety procedures • emergency procedures • evacuation procedures |
| Resources and equipment | <p>may include:</p> <ul style="list-style-type: none"> • inspection equipment • maps, plans • satellite imagery • aerial photographs • survey plans • spatial data and information • cameras • personal protective equipment - respirators, gloves, overalls, boots, hearing protection, goggles, masks etc • test kit equipment • recording equipment • measuring equipment • storage equipment/facilities • entry authority/warrant • Global Positioning System (GPS) equipment • compass • communication equipment • computers • vehicles - 2 or 4 wheel drive |
| Legislation | <p>may include, for example:</p> <ul style="list-style-type: none"> • Quarantine Act, proclamations and regulations • Crimes Act and Criminal Code Act • Customs Act and regulations • Wildlife Protection Act • Export Control Act • Imported Foods Act • Occupational Health and Safety Act <p>Government legislation and regulations, such as those relating to:</p> <ul style="list-style-type: none"> • Agriculture, horticulture and fisheries • conservation and land management • environmental protection • building • water • emergencies • international legislation/codes of behaviour |
| Inspections and monitoring activities | <p>may relate to:</p> <ul style="list-style-type: none"> • aircraft |

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| | <ul style="list-style-type: none"> • airfreight • animal products • animals • cargo • cereals • collection of biological specimens • disposal of organic waste • fresh produce • goods • land condition, such as: <ul style="list-style-type: none"> ➤ topography ➤ salinity ➤ erosion ➤ weed infestation ➤ vermin infestation ➤ fire hazard ➤ over grazing • land improvements, such as: <ul style="list-style-type: none"> ➤ fences ➤ buildings ➤ sporting or playground equipment ➤ irrigation infrastructure ➤ sewerage infrastructure ➤ waterfront occupations ➤ community structures ➤ land usage ➤ leases and other tenures, to ensure compliance with conditions ➤ licence/permit compliance (e.g. vegetation clearing) ➤ live fish ➤ livestock ➤ mail ➤ mineral samples ➤ passenger baggage ➤ people ➤ pests ➤ plant products ➤ plants ➤ premises ➤ properties ➤ reserves and their use/s ➤ survey activities to maintain readiness for district emergency plans ➤ vector monitoring ➤ vessels |
| Compliance programs | <p>may include:</p> <ul style="list-style-type: none"> • audit • monitoring • treatment • containment • control |

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| | <ul style="list-style-type: none"> • eradication • destruction |
| Action | <p>may include:</p> <ul style="list-style-type: none"> • advice • warning • formal notification of intent • infringement notices • on-the-spot fines • court prosecution |
| Records | <p>may include:</p> <ul style="list-style-type: none"> • notes • case files • statistics • forms (application forms, disease notification forms, etc) • notices (seizure notice, infringement notice, etc) • invoices • receipts • commercial documentation such as bills of lading, airway bills |
| Non-compliance | <p>may include:</p> <ul style="list-style-type: none"> • both routine and non-routine matters of a more complex or detailed nature, with discretion to determine appropriate action • referrals from other staff of matters that are more difficult, or of potential interest to external parties such as the media, public, political parties etc |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Must demonstrate knowledge and skills competences that confirm:</p> <ul style="list-style-type: none"> • the knowledge requirements of this unit • the skill requirements of this unit • performance at an experienced, unsupervised level with responsibility for supervision in a defined area for inspections and monitoring undertaken in a range of (3 or more) contexts (or occasions, over time) |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge and understanding of:</p> <ul style="list-style-type: none"> • public sector legislation including occupational health and safety, environment, privacy etc • organisational policy and procedures • inspection procedures • monitoring procedures • relevant responses to complex/serious non-compliance • enabling legislation • elements of an offence • equity and diversity principles • workplace and industry environment |
| Underpinning Skills | <p>Demonstrate skills in:</p> <ul style="list-style-type: none"> • demonstrating leadership and team management in the |

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| | <p>context of inspection and monitoring</p> <ul style="list-style-type: none"> • undertaking observation and analysis • communicating with a diverse range of clients and staff • writing correspondence, submissions and reports, requiring discretion to determine appropriate content and style • dealing with referrals from other staff on matters that are more difficult, or of potential interest to external parties such as the media, public, political parties etc • using computers for word processing and manipulation of statistical data • operating workplace equipment • responding to diversity, including gender and disability • applying public sector legislation such as occupational health and safety and environment in the context of complex inspection and monitoring |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Analyze Data and Report Results |
| Unit Code | TRD LMS5 09 0215 |
| Unit Descriptor | This unit of competency covers the ability to perform scientific calculations, analyse trends and uncertainty in data and report results within the required timeframe. This unit of competency is applicable to technical officers and laboratory technicians working in all industry sectors. |

| Elements | Performance Criteria |
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| 1. Perform scientific calculations | <p>1.1. Raw data are ensured to be consistent with expectations and reasonable ranges.</p> <p>1.2. Scientific quantities involving algebraic, power, exponential and/or logarithmic functions are calculated.</p> <p>1.3. Calculated quantities are ensured to be consistent with estimations.</p> <p>1.4. Results are presented using the appropriate units, uncertainties and number of significant figures.</p> |
| 2. Analyse trends and relationships in data | <p>2.1 Linear and non-linear relationships between sets of data are determined.</p> <p>2.2 Control charts are prepared and analyzed to determine if a process is in control.</p> <p>2.3 Possible causes for out-of-control condition are identified.</p> <p>2.4 Enterprise procedures are followed to return process to in-control operation.</p> |
| 3. Determine variation and/or uncertainty in data distributions | <p>3.1 Raw data is organized into appropriate frequency distributions.</p> <p>3.2 Means, medians, modes, ranges and standard deviations for ungrouped and grouped data are calculated.</p> <p>3.3 Frequency distributions are interpreted to determine the characteristics of the sample or population.</p> <p>3.4 Standard deviations and confidence limits for means are calculated and replicated.</p> <p>3.5 The uncertainty in measurements is estimated using statistical analysis.</p> <p>3.6 Data acceptability is determined using statistical tests and enterprise procedures.</p> |
| 4. Check for aberrant results | <p>4.1 Results that cannot be reconciled with sample, sample documentation, testing procedures and/or expected outcomes are identified.</p> <p>4.2 Appropriate actions are determined in consultation with supervisor as required.</p> |

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| 5. Report results | <p>5.1. Charts, tables and graphs are used to present results in the required format.</p> <p>5.2. Verify that entry of data and results are made correct.</p> <p>5.3. Reports are prepared in a format and style consistent with their intended use and enterprise guidelines.</p> <p>5.4. Results are communicated within the specified time and in accordance with enterprise confidentiality and security guidelines.</p> |
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| Variable | Range |
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| Data | may include: <ul style="list-style-type: none"> • worksheets • spreadsheets or databases linked to information management systems • the results of tests, measurements, analyses and surveys |
| Calculating | may include: <ul style="list-style-type: none"> • percentage and absolute uncertainties in measurements and test results • dose (mg), dilution(1:10), concentration (molarity, g/mL, mg/L, ppm, ppb) • pH, [H+], [OH-], buffer calculations, Ka, pKa, Kb, pKb, Kw • solubility constants Ks, pKs • radioactivity: <ul style="list-style-type: none"> ➤ half life, dose, activity and exposure • optical properties: <ul style="list-style-type: none"> ➤ absorbance/transmittance, path length, extinction coefficient, concentration (Beers law) and detection limits • electrical properties: <ul style="list-style-type: none"> ➤ conductivity, resistivity and dielectric constants • mechanical properties: <ul style="list-style-type: none"> ➤ stress, strain, elastic moduli, yield strength and hardness • thermal properties: <ul style="list-style-type: none"> ➤ heat capacity, thermal expansion, thermal conductivity and thermal resistance • food content (%) of water, ash, dietary and crude fibre, carbohydrate, protein, fat and specific vitamin • quantities associated with quality control monitoring, assessment and reporting may be performed: <ul style="list-style-type: none"> • with a calculator • without a calculator • with computer software such as: <ul style="list-style-type: none"> ➤ spreadsheets ➤ databases ➤ statistical packages |
| Statistical analysis | may include the use of: <ul style="list-style-type: none"> • histograms, frequency plots, stem and leaf plots, boxplots and scatter plots |

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| | <ul style="list-style-type: none"> • probability and normal probability plots • Pareto diagrams, Stewhart control charts and CuSum control charts • regression methods for calibration, linearity checks and comparing analytical methods • analysis of variance (ANOVA) • data acceptability tests, such as Q, T and You den |
| Codes of practice | Where reference is made to industry codes of practice, and/or Ethiopian/international standards, it is expected the latest version will be used |
| Standards, codes, procedures and/or enterprise requirements | <p>may include:</p> <ul style="list-style-type: none"> • Ethiopian and international standards such as: <ul style="list-style-type: none"> ➢ The International System of units (SI) and its application ➢ Quantifying uncertainty in analytical measurement ➢ Accuracy (trueness and precision) of measurement methods and results ➢ Uncertainty of measurement - Part 3 Guide to the expression of Uncertainty in Measurement (GUM) • national measurement regulations and guidelines • National Measurement Institute Technical notes • Material Safety Data Sheets (MSDS) • equipment manuals and warranty, supplier catalogues and handbooks • sampling and test procedures and Standard Operating Procedures (SOPs) • enterprise quality manual and customer quality plan • validation of the equipment and associated software, where applicable • validation of spreadsheets developed in-house for assay and process calculations |
| Scientific and technical terminology | <p>may include:</p> <ul style="list-style-type: none"> • variables • dispersion • central tendency • process control • process stability • normal distribution • confidence level • replication |
| Laboratory computations | <p>may include:</p> <ul style="list-style-type: none"> • algebraic, logarithmic, exponential and power functions • calculations involving fractions, decimals, ratios, proportions and percentages • evaluation of formulae containing powers, exponents and logarithms functions • use of scientific notation, correct units and correct number of significant figures • calculation of uncertainties • preparation and interpretation of linear, semi-log and log-log graphs |

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| | <ul style="list-style-type: none"> • calculation and interpretation of statistical quantities, such as mean, median, mode, range, variance and standard deviation • determination of regression line equations and correlation coefficients • preparation and interpretation of more complex control charts and frequency distribution plots |
| Graphical analysis | <p>may include:</p> <ul style="list-style-type: none"> • determination of linear, logarithmic, exponential and power relationships • regression lines and interpretation of correlation coefficients • preparing frequency distributions for given data • calculating and interpreting measures of central tendency and dispersion |
| Records | <p>may include information associated with:</p> <ul style="list-style-type: none"> • purchase of equipment and materials • service records • safety procedures • history of calibration and test results |
| Occupational Health and Safety (OHS) and environmental management requirements | <p>requirements:</p> <ul style="list-style-type: none"> • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Nutrition Research Institute and Ministry of Health |

| Evidence Guide | |
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| Critical aspects of Competence | <p>Must demonstrate knowledge and skills competence to:</p> <ul style="list-style-type: none"> • store, retrieve and manipulate data following document traceability procedures • calculate scientific quantities relevant to their work and present accurate results in the required format • analyse data to determine relationships between variables • prepare frequency distributions for given data, calculate and interpret measures of central tendency and dispersion • prepare and interpret control charts and take appropriate actions • maintain the security and confidentiality of data in accordance with workplace and regulatory requirements • report results in the required formats and expected timeframe. |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • relevant scientific and technical terminology such as: variables, dispersion, central tendency, process control, process stability, normal distribution, confidence level and |

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| | <p>replication</p> <ul style="list-style-type: none"> • calculations involving evaluation of formulae containing algebraic, power, exponential and/or logarithmic functions • preparation and interpretation on linear and non-linear graphs, complex control charts and frequency distribution plots • determination of regression line equations, correlation coefficients • statistical analysis and significance tests, such as t-test, f-test, analysis of variance (ANOVA) • data acceptability tests, such as Q, T and Youden • the characteristics of a valid measurement • relevance/importance of the national measurement legislation and guidelines to laboratory measurement • sources and estimates of uncertainty in measurements • procedures for data traceability • procedures for verifying data and rectifying mistakes • procedures for maintaining and filing records, and maintaining security of data |
| Underpinning Skills | <p>Demonstrate skills to:</p> <ul style="list-style-type: none"> • performing laboratory computations • calculating scientific quantities • statistical analysis • graphical analysis • reporting results in the required formats and expected timeframe • storing, retrieving and manipulating data following document traceability procedures • maintaining the security and confidentiality of data in accordance with workplace and regulatory requirements |
| Resources Implication | <p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p> |
| Methods of Assessment | <p>Competence may be assessed through:</p> <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | <p>Competency may be assessed in the work place or in a simulated work place setting</p> |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Conduct Measurement Licensee Audit |
| Unit Code | TRD LMS5 10 0215 |
| Unit Descriptor | <p>This unit covers the ability to undertake quality and performance audits of organisations and individuals operating under the scope of a licence for performing measuring activities. It includes planning, organising and undertaking an audit; and evaluating, recording and providing advice on audit results.</p> <p>In practice, auditing may overlap with other generalist or specialist public sector work activities, such as acting ethically, complying with legislation, applying government systems, managing change, managing diversity, and managing evaluations.</p> <p>This unit of competency applies to public officers appointed under legislation to complete quality documentation and performance audits of organisations and individuals licensed under legislation to perform measurement activities.</p> |

| Elements | Performance Criteria |
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| 1. Prepare for audit. | <p>1.1. Audit scope is established in accordance with legislative requirements and organizational procedures.</p> <p>1.2. Activity specialists are identified and accessed to support audit as required.</p> <p>1.3. Licensee history is accessed and reviewed.</p> <p>1.4. Appropriate information to the audit is accessed and interpreted.</p> <p>1.5. Arrangements are made with licensee for a quality or observation audit.</p> <p>1.6. Test equipment, products and consumables required for the audit are identified and accessed.</p> <p>1.7. Required test equipment is ensured to fit for purpose in accordance with applicable legislation and organizational procedure.</p> <p>1.8. Activities are planned to meet audit objectives and minimize disruption to business operations.</p> |
| 2. Conduct a quality audit. | <p>2.1. Entry meeting is scheduled to confirm audit scope and objectives.</p> <p>2.2. Operational procedures and assessment methods are confirmed for the audit with appropriate personnel.</p> <p>2.3. Information that is adequate, representative and meets audit requirements is collected.</p> <p>2.4. Audit methods and techniques are used to evaluate relevant information.</p> <p>2.5. Documentation and procedures relating to the license and</p> |

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| | <p>associated activities are reviewed for compliance with regulatory requirements.</p> <p>2.6. Patterns, trends and areas of risk are identified and reported.</p> <p>2.7. The rights of the licensee are maintained at all times.</p> |
| 3. Conduct a performance audit. | <p>3.1. The scope of the activity being audited and the expected outcomes is identified.</p> <p>3.2. Relevant local workplace, health and safety issues are identified and appropriate control strategies implemented.</p> <p>3.3. The skills and knowledge of authorized person completing the licensed activity are evaluated.</p> <p>3.4. Result of the licensed activity is inspected for compliance with legislative requirements.</p> <p>3.5. Performance audit outcomes are assessed against expected outcomes.</p> <p>3.6. The rights of licensee are maintained at all times.</p> |
| 4. Analyse and report audit results. | <p>4.1. Information, test results and observations are examined against audit objectives and prescribed performance criteria.</p> <p>4.2. Audit data for isolated and systemic quality and performance issues are analyzed.</p> <p>4.3. Inspection documentation, including recommendations for improvement is completed in accordance with legislative requirements and organizational procedures.</p> <p>4.4. Communicate inspection results within specified time and according to organizational guidelines.</p> <p>4.5. Recommend follow-up actions as appropriate.</p> |
| 5. Act on non-compliance. | <p>5.1. Applicable remedial or enforcement action for the non-compliance is selected in accordance with legislative requirements, and organizational policy and procedures.</p> <p>5.2. Licensee is informed of non-compliance and consequences of failing to have it corrected.</p> <p>5.3. Enforcement action is implemented in accordance with legislative requirements, and organizational policy and procedures.</p> <p>5.4. The rights of the licensee are maintained at all times.</p> |

| Variable | Range |
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| Appropriate information | <p>may include:</p> <ul style="list-style-type: none"> • reference standard • certificates of verification • certificates of approval for measuring instruments |

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| | <ul style="list-style-type: none"> • test procedures for measuring instruments • organisational test reports • organisational procedures, such as those found in company quality assurance manuals • national measurement legislation • OHS regulations, guidelines and procedures • Material Safety Data Sheets (MSDS) • equipment manuals and warranties • supplier catalogues and handbooks. |
| Test equipment | <p>such as:</p> <ul style="list-style-type: none"> • control instruments • weighing instruments • pumping units • two-way communication • hoses and fittings • rail wagons, trains and tankers • LPG cylinders. |
| Legislation | <p>may include:</p> <ul style="list-style-type: none"> • national measurement legislation • applicable commonwealth, state and territory OHS legislation. |
| Relevant information | <p>may include:</p> <ul style="list-style-type: none"> • test reports • safety procedures • history of equipment calibration and test results. |
| Prescribed performance criteria for instruments | <p>may include:</p> <ul style="list-style-type: none"> • criteria described in national measurement legislation • certificates of approval • national test procedure • organisational policy and procedures. |
| Remedial action | <p>may include:</p> <ul style="list-style-type: none"> • rectification advice. |
| Enforcement action | <p>may include:</p> <ul style="list-style-type: none"> • formal warnings • infringement notices • formal undertakings • injunctions • prosecution • varying, suspending or cancelling a licence. |

Evidence Guide

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| Critical Aspects of Competence | <p>Demonstrates skills and knowledge competences to:</p> <ul style="list-style-type: none"> • identify, access and apply test procedures • identify and use suitable reference standards • evaluate and adjust the impact of the operating environment on the performance of the instrument • analyse test results to determine the instrument's suitability for |
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| | <p>verification (trade use)</p> <ul style="list-style-type: none"> • identify the scope of a verifier performance audit and assess results with expected outcomes • audit the performance of verifiers of weighing instruments • identify and implement additional inspection strategies for non-instrument related breaches of national measurement legislation • recognise and act on non-compliance • maintain the security and confidentiality of data according to organisational and regulatory requirements • report results in the required formats and expected timeframe. |
| <p>Underpinning Knowledge and attitudes</p> | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • auditing systems • risk management principles • hazards that may exist when conducting an audit and ways of controlling risks involved • national measurement and OHS legislation • powers of inspectors • use of audit/assessment tools • industry practices and procedures relating to measurement process and verification of measuring instruments • organisational reporting procedures relating to quality audits • legal issues and terminology relating to quality audits • audit methods and techniques • codes of practice, regulations and standards, such as: <ul style="list-style-type: none"> ➢ ISO 9000:2000 Quality management Systems - Fundamentals and Vocabulary ➢ ISO 19011:2003 Guidelines for Quality and/or Environmental Management Systems Auditing ➢ General requirements for the competence of testing and calibration laboratories • product and service knowledge relating to measurement process and verification of measuring instruments • quality principles and techniques relating to measurement process and verification of measuring instruments • current audit practices |
| <p>Underpinning Skills</p> | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • literacy skills to access, read and interpret: <ul style="list-style-type: none"> ➢ complex and formal documents ➢ technical data ➢ regulatory requirements ➢ organizational policies and procedures • numeracy skills to analyse test results • initiative and enterprise skills to: <ul style="list-style-type: none"> ➢ identify and resolve potential problems and seek out information ➢ apply risk management principles to local workplace OHS issues and control strategies • self-management skills to: <ul style="list-style-type: none"> ➢ modify activities to cater for variations in workplace |

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| | <ul style="list-style-type: none"> contexts and environment <ul style="list-style-type: none"> ➤ demonstrate attention to detail • technology skills to: <ul style="list-style-type: none"> ➤ select and apply appropriate technology, information systems and procedures ➤ use recording, testing and specialized evidence collection equipment • interpersonal skills to: <ul style="list-style-type: none"> ➤ respond to diversity, including disability and gender ➤ relate to people from a range of social, cultural and ethnic backgrounds, and physical and mental abilities • communication skills to: <ul style="list-style-type: none"> ➤ justify or explain the assessment decision and recommended corrective action ➤ listen and question in complex exchanges of oral information • teamwork skills to work with a variety of professionals • organisational and planning skills to: <ul style="list-style-type: none"> ➤ implement methodical and systematic approaches ➤ prioritize work and coordinate self and others in relation to workplace activities • time-management skills to: <ul style="list-style-type: none"> ➤ plan for licensee's operation schedules and keep downtime to a minimum and use of travel time effective ➤ ensure corrective actions are dealt with in a timely manner |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Apply Legal Principles in Corporation Law Matters |
| Unit Code | TRD LMS5 11 0215 |
| Unit Descriptor | This unit describes the performance outcomes, skills and knowledge required to apply legal principles in corporation law matters, including establishing business structures and preparing associated documentation. A range of legislation, rules, regulations and codes of practice may apply to this unit at the time of endorsement, depending on job roles and jurisdictions. This unit applies to individuals who apply knowledge of a range of principles in corporation law matters. Its application in the workplace will be determined by the job role of the individual and the legislation, rules, regulations and codes of practice relevant to different jurisdictions. |

| Elements | Performance Criteria |
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| 1. Identify laws and principles of corporation law | <p>1.1 Knowledge of corporation law and related legislation is sourced.</p> <p>1.2 Different types of business structures are identified and their structure, personnel, legal obligations, establishment procedures and purpose are clearly outlined.</p> <p>1.3 The differences between proprietary companies and public companies are identified and the legal obligations, criteria and purpose of each are clearly outlined.</p> |
| 2. Enhance professional practice through application of relevant corporation law principles to business structures | <p>2.1 Consequences of incorporation are identified.</p> <p>2.2 Structure, contents and purposes of an organization's memorandum of association and articles of association are identified.</p> <p>2.3 Other specific activities relevant to corporation law are identified.</p> |
| 3. Undertake administrative tasks associated with corporation law | <p>3.1 Forms, documents and annexure are prepared at the appropriate time, presented to designated person for review and signed-off, and lodged with the appropriate government department.</p> <p>3.2 Arrangements are made for documents to be dispatched, signed and witnessed by appropriate parties.</p> <p>3.3 Assistance is provided in preparing company prospectus where required.</p> <p>3.4 Meetings are arranged as necessary to discuss the nature of debenture and the assets underwriting the charge</p> <p>3.5 Appropriate searches are undertaken and search documents obtained from relevant agencies.</p> <p>3.6 Forms and documents related to the administration of</p> |

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| | <p>charges are prepared at the appropriate time, presented to designated person for review and signed-off and lodged with the appropriate government department.</p> <p>3.7 Types of costs for legal services are determined in accordance with legislative and regulatory requirements.</p> <p>3.8 Arrangements are made for documents to be dispatched, signed and witnessed by appropriate parties</p> |
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| Variable | Range |
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| Legislation | <p>May includes that relating to:</p> <ul style="list-style-type: none"> • National Legal metrology law • area of law • client and firm • relevant federal corporation law • relevant corporation law • criminals about legal metrology • proclamation about legal metrology • tort, equity and statute law • Trust accounts. |
| Different types of business structures | <p>May include:</p> <ul style="list-style-type: none"> • association • company limited by guarantee • company limited by shares • company limited by shares and guarantee • holding company • no-liability company • partnerships, including joint ventures, formal and informal • registrable Ethiopian corporation • shelf company • subsidiary company • trusts, including express, discretionary and bare • Unlimited company. |
| Consequences of incorporation | <p>May relate to:</p> <ul style="list-style-type: none"> • formalities, publicity and expense • limited liability • perpetual succession • property • separate legal entity • suing and being sued • Transfer of shares. |
| Specified activities | <p>May relate to:</p> <ul style="list-style-type: none"> • annual general meeting • auditing • cessation of business • class meeting |

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| | <ul style="list-style-type: none"> • extraordinary general meeting • liquidation • statutory meeting • take-overs • Winding up. |
| Forms | <p>May include:</p> <ul style="list-style-type: none"> • application for: <ul style="list-style-type: none"> ➢ registration as a company ➢ registration of a business name ➢ reservation of a name • notice of resolution • notification of: <ul style="list-style-type: none"> ➢ allotment of shares ➢ consenting directors ➢ initial appointment of office holders <p>Statement of change in certain particulars, such as persons in relation to whom the business name is registered. May include:</p> <ul style="list-style-type: none"> • application for: <ul style="list-style-type: none"> ➢ registration as a company ➢ registration of a business name ➢ reservation of a name • notice of resolution • notification of: <ul style="list-style-type: none"> ➢ allotment of shares ➢ consenting directors ➢ initial appointment of office holders • Statement of change in certain particulars, such as persons in relation to whom the business name is registered. |
| Designated person | <p>May include:</p> <ul style="list-style-type: none"> • legal practitioner • practice manager • Supervisor. |
| Appropriate parties | <p>May include:</p> <ul style="list-style-type: none"> • director • manager |
| Search documents | <p>May include:</p> <ul style="list-style-type: none"> • certificate of incorporation • Certificate of title. |
| Relevant agencies | <p>May include:</p> <ul style="list-style-type: none"> • Securities and Investments offices to confirm company details and prior charges • Land titles office to check if borrower's property is subject to any outstanding dealings, charges and/or mortgages. |
| Forms and documents related to the administration of charges | <p>May include:</p> <ul style="list-style-type: none"> • charge document, which an organisation may have in its precedent bank • equitable charge document • mortgage document |

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| | <ul style="list-style-type: none"> • notification of details of change • notification of discharge or release of property from a charge • prior charge documents • priority agreement with previous mortgagees or charges • prospectus • Stamp duty compliance form. |
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| Critical Aspects of Competence | <p>Must demonstrate knowledge and skills competence to:</p> <ul style="list-style-type: none"> • prepare and lodge appropriate and accurate information and documents at the required stages of the legal process • conduct all duties within accepted codes of conduct, including those relating to maintaining confidentiality, use of company property, duty of care, ethical behaviours, privacy, non-discriminatory practice, conflict of interest and compliance with reasonable direction • Apply knowledge of relevant court processes, current legislation, legal processes and required documentation. |
| Underpinning Knowledge and Attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • scope of job role in the context of legislation, regulations • relevant court processes, current legislation, legal processes and required documentation • organisation's required policies and procedures for the full range of tasks covered • legal terminology, including that specific to corporation law • accepted codes of practice relevant to the workplace, including those relating to: <ul style="list-style-type: none"> ➢ privacy and confidentiality ➢ use of company property ➢ duty of care ➢ ethical behavior ➢ non-discriminatory practice ➢ conflict of interest |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • communication skills to provide clear and specific instructions about information required • literacy skills to: <ul style="list-style-type: none"> ➢ follow complex legal procedures ➢ consider aspects of context, purpose and audience when generating and formatting documents ➢ edit and proofread to ensure accuracy, consistency, clarity of meaning and conformity to enterprise requirements • research skills to: <ul style="list-style-type: none"> ➢ locate necessary information from external sources ➢ identify and evaluate status of information • organisational skills to prepare, complete and despatch documents in a timely fashion • technology skills to: |

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| | <ul style="list-style-type: none"> ➤ operate office equipment ➤ use a range of common software packages |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Promote the Values and Ethos of Public Service |
| Unit Code | TRD LMS5 12 0215 |
| Unit Descriptor | <p>This unit covers the responsibility of those in public service to model and encourage in others the highest standards of ethical conduct. It includes promoting ethical standards, assisting staff to avoid conflicts of interest, and modelling and fostering integrity of conduct.</p> <p>In practice, ethical conduct is demonstrated in the context of other generalist or specialist work activities such as developing client services, coordinating financial resources, providing human resource services, conducting investigations, letting contracts etc. This unit supports the attainment of skills and knowledge required for applying ethical conduct and accountability required in those working in government employment.</p> |

| Elements | Performance Criteria |
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| 1. Promote ethical standards | <p>1.1 Interpretation of ethical standards is discussed with senior staff to ensure common understanding of requirements.</p> <p>1.2 The ethical obligations of public service and the consequences of unethical conduct are explained to others in a manner suited to their levels of understanding, experience and specific needs.</p> <p>1.3 Conduct of self and others is assessed against ethics standards, legislation and guidelines, and feedback or assistance is timely, constructive, and consistent.</p> <p>1.4 Impartial, culturally and politically neutral advice is provided in accordance with organisational procedures.</p> <p>1.5 Resolution and/or referral of ethical problems identified in dealings with staff and the public are used as learning opportunities within the workgroup without compromising privacy and confidentiality considerations.</p> |
| 2. Assist staff to avoid conflicts of interest | <p>2.1 Conflict of interest requirements are explained to staff using language and supporting material suitable to their needs and the situations they are likely to experience.</p> <p>2.2 Matters involving competing interests or conflicting views on appropriate action are discussed with staff, and resolved or referred in accordance with policy and guidelines</p> |
| 3. Model and foster integrity of conduct | <p>3.1 Personal work practices are used to provide a consistent example of desired ethical conduct, and staff/team values are developed through collaboration and leadership.</p> <p>3.2 Ethical, lawful and reasonable directions are provided to staff, and protection is provided from reprisals for refusing others' directions to act unethically.</p> <p>3.3 The principles of procedural fairness are modelled and explained to others using strategies and language suited to their levels of understanding, experience and specific needs</p> |

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| | <p>3.4 Decision making which upholds ethical standards is used, promoted and explained to others.</p> <p>3.5 The risk of unethical conduct is assessed in accordance with organisational guidelines, and changes to policies or practices are recommended to improve outcomes.</p> <p>3.6 The reporting of suspected unethical conduct is encouraged, dealt with in a confidential manner and acted on promptly, and in accordance with policy and procedures.</p> |
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| Variable | Range |
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| Consequences of unethical behaviour | <p>may include:</p> <ul style="list-style-type: none"> • disciplinary action • transfer • demotion • dismissal • legal liability • that outlined in legislation, policy and/or guidelines |
| Ethics standards | <p>may include:</p> <ul style="list-style-type: none"> • public sector standards • standards referred to legislation • codes of ethics • organisational codes of conduct • organisational mission and values statements • organisational procedures/guidelines • government policy • professional standards |
| Legislation and guidelines | <p>may include:</p> <ul style="list-style-type: none"> • legislation for public sector management • freedom of information legislation • privacy legislation • equal employment opportunity and anti-discrimination law • public sector standards • equity guidelines • workplace diversity guidelines • Ministerial directions • codes of ethics • organisational codes of conduct • organisational mission and values statements • organisational policy, procedures/guidelines • government policy • legal precedents |
| Referrals of ethical problems | <p>may be made to:</p> <ul style="list-style-type: none"> • line management • human resources • workplace relations officer • grievance officer • chief executive officer |

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| | <ul style="list-style-type: none"> • public service commissioner • public sector standards body • organisational ethics committee • internal grievance mechanisms • confidant programs (whistleblower protection programs) • organisational professional reporting procedures • unions and professional bodies • ombudsman |
| Ethical problems which may need to be referred rather than resolved at this level | <p>may include:</p> <ul style="list-style-type: none"> • conflict between public sector standards and personal values • conflict between public sector standards and other standards such as professional standards • conflict between public sector standards and directions of a senior officer or unit • tension between two 'rights' for example, the right to privacy versus the right to freedom of information • conflict regarding issues of personal and organisational intellectual property |
| Conflicts of interest | <p>may include:</p> <ul style="list-style-type: none"> • perceived, potential and actual conflicts • bribery • improper use of official information • offers of gifts, entertainment • outside employment • intellectual property • favours for friends, relatives and others • memberships of organisations • political activity • pecuniary and non-pecuniary conflicts • conflicts relating to tendering and contracting |
| Principles of procedural fairness | <p>may include:</p> <ul style="list-style-type: none"> • the right to be heard/put your case • the right to be informed of a complaint or case against you • the right to be advised of the outcome/recommendations of an investigation involving you • the right to know reasons for decisions affecting you • the right to privacy • the right to representation • the right to remain silent • the decision maker should not be a judge in his/her own cause • in accordance with the law |
| Unethical conduct | <p>may include:</p> <ul style="list-style-type: none"> • fraud, corruption, maladministration and waste • unauthorised access to and use of information, money/finances, vehicles, equipment, resources • improper public comment on matters relating to the government and/or the organisation • falsifying records |

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| | <ul style="list-style-type: none"> • giving false testimonials • dishonesty • improper use of telephones, credit cards, frequent flyer points, email and Internet • extravagant or wasteful practices • personal favours, preferential treatment • putting barriers in place, hindering, blocking action • compromising behaviour including sexual harassment • directing others to act unethically • oppressive/coercive management decisions • resorting to illegality to obtain evidence |
| Reporting | <p>may include:</p> <ul style="list-style-type: none"> • protection and support of those reporting unethical conduct • informal, low key investigation and evidence gathering to confirm allegations • referral to authority identified in guidelines • use of confidant programs such as whistleblower protection programs or organisational professional reporting procedures |

| Evidence Guide | |
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| Critical Aspects of Competence | <p>Must demonstrate knowledge and skills competences those confirm:</p> <ul style="list-style-type: none"> • the knowledge requirements of this unit • the skill requirements of this unit • promotion of the values and ethos of public service in a range of (3 or more) contexts (or occasions, over time) where contexts include generalist or specialist work activities such as developing client services, coordinating financial resources, providing human resource services, conducting investigations, letting contracts etc |
| Underpinning Knowledge and attitudes | <p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> • public sector ethics • organisational code of ethics/conduct • legislation related to privacy, freedom of information, human rights, whistleblower protection • procedural fairness • equal employment opportunity, equity and diversity principles • procedures for declaring conflicts of interest • procedures or protocols for reporting unethical conduct • occupational health and safety procedures relating to ethical work practices |
| Underpinning Skills | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • applying ethical decision making/problem solving • using a variety of words and language structures to explain complex ideas to different audiences • interpreting and explaining complex, formal documents and assisting others to apply them in the workplace • using strategies to clarify understanding • preparing written advice and reports requiring accuracy of |

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| | <p>expression</p> <ul style="list-style-type: none"> • accessing legislation and codes of ethics electronically or in hard copy • responding to diversity, including gender and disability • assisting others to apply occupational health and safety and environmental procedures relating to ethical work practices |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Manage Project Quality |
| Unit Code | TRD LMS5 13 0215 |
| Unit Descriptor | This unit specifies the outcomes required to manage quality within projects. It covers determining quality requirements, implementing quality assurance processes, and using review and evaluation to make quality improvements in current and future projects. |

| Elements | Performance Criteria |
|---|---|
| 1. Determine quality requirements | <p>1.1 Quality objectives, standards and levels are determined, with input from stakeholders and guidance of a higher project authority, to establish the basis for quality outcomes and a quality management plan.</p> <p>1.2 Established quality management methods, techniques and tools are selected and used to determine preferred mix of quality, capability, cost and time.</p> <p>1.3 Quality criteria are identified, agreed with a higher project authority and communicated to stakeholders to ensure clarity of understanding and achievement of quality and overall project objectives.</p> <p>1.4 Agreed quality requirements are included in the project plan and implemented as basis for performance measurement.</p> |
| 2. Implement quality assurance | <p>2.1 Results of project activities and product performance are measured and documented throughout the project life cycle to determine compliance with agreed quality standards.</p> <p>2.2 Causes of unsatisfactory results are identified, in consultation with the client, and appropriate actions are recommended to a higher project authority to enable continuous improvement in quality outcomes.</p> <p>2.3 Inspections of quality processes and quality control results are conducted to determine compliance of quality standards to overall quality objectives.</p> <p>2.4 A quality management system is maintained to enable effective recording and communication of quality issues and outcomes to a higher project authority and stakeholders.</p> |
| 3. Implement project quality improvements | <p>3.1 Processes are reviewed and agreed changes implemented continually throughout the project life cycle to ensure continuous improvement to quality.</p> <p>3.2 Project outcomes are reviewed against performance criteria to determine the effectiveness of quality management processes and procedures.</p> <p>3.3 Lessons learned and recommended improvements are</p> |

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| | identified, documented and passed to a higher project authority for application in future projects. |
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| Variable | Range |
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| Quality objectives | May include but not limited to: <ul style="list-style-type: none"> • requirements from the client and other stakeholders • requirements from a higher project authority • negotiated trade-offs between cost, schedule and performance • those quality aspects which may impact on customer satisfaction |
| Quality management plan | May include but not limited to: <ul style="list-style-type: none"> • established processes • authorizations and responsibilities for quality control • quality assurance • continuous improvement |
| Quality management methods, techniques and tools | May include but not limited to: <ul style="list-style-type: none"> • brainstorming • benchmarking • charting processes • ranking candidates • defining control • undertaking benefit/cost analysis • processes that limit and/or indicate variation • control charts • flowcharts • histograms • pareto charts • scatter gram • run charts |
| Quality control | May include but not limited to: <ul style="list-style-type: none"> • monitoring conformance with specifications • recommending ways to eliminate causes of unsatisfactory performance of products or processes • monitoring of regular inspections by internal or external agents |
| Improvements | May include but not limited to: <ul style="list-style-type: none"> • formal practices, such as total quality management or continuous improvement • improvement by less formal processes which enhance both the product quality and processes of the project, for example client surveys to determine client satisfaction with project team performance |

Evidence Guide

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| <p>Critical Aspects of Competence</p> | <p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> • lists of quality objectives, standards, levels and measurement criteria • records of inspections, recommended rectification actions and quality outcomes • management of quality management system and quality management plans • application of quality control, quality assurance and continuous improvement processes • records of quality reviews • lists of lessons learned and recommended improvements <p>Processes that could be used as evidence include:</p> <ul style="list-style-type: none"> • how quality requirements and outcomes were determined for projects • how quality tools were selected for use in projects • how team members were managed throughout projects with respect to quality within the project • how quality was managed throughout projects • how problems and issues with respect to quality and arising during projects were identified and addressed • how projects were reviewed with respect to quality management • how improvements to quality management of projects have been acted upon |
| <p>Underpinning Knowledge and Attitudes</p> | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • the principles of project quality management and their application • acceptance of responsibilities for project quality management • use of quality management systems and standards • the place of quality management in the context of the project life cycle • appropriate project quality management methodologies; and their capabilities, limitations, applicability and contribution to project outcomes • attributes: <ul style="list-style-type: none"> ➤ analytical ➤ attention to detail ➤ able to maintain an overview ➤ communicative ➤ positive leadership |
| <p>Underpinning Skills</p> | <p>Demonstrate skills of:</p> <ul style="list-style-type: none"> • ability to relate to people from a range of social, cultural and ethnic backgrounds, and physical and mental abilities • project management • quality management • planning and organizing • communication and negotiation • problem-solving • leadership and personnel management |

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| | <ul style="list-style-type: none"> • monitoring and review skills |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Facilitate and Capitalize on Change and Innovation |
| Unit Code | TRD LMS5 14 0215 |
| Unit Descriptor | This unit specifies the outcomes required to plan and manage the introduction and facilitation of change; particular emphasis is on the development of creative and flexible approaches, and on managing emerging opportunities and challenges. |

| Elements | Performance Criteria |
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| 1. Participate in planning the introduction and facilitation of change | <p>1.1 Concept, nature importance and objective of change are understood.</p> <p>1.2 Steps tools and approaches of changes are planned and made in consultation with appropriate stakeholders.</p> <p>1.3 The relationship among innovation, quality, change and cost is understood.</p> <p>1.4 Environments that facilitate the expedition of change are understood.</p> <p>1.5 Change resistance reducing techniques are identified and implemented.</p> |
| 2. Manage growth and transition of business | <p>2.1 Needs for growth are identified.</p> <p>2.2 Growth strategies are identified.</p> <p>2.3 Selected growth strategies are implemented.</p> |
| 3. Develop creative and flexible approaches and solutions | <p>3.1 Concepts, types and nature of problem are understood.</p> <p>3.2 Variety of problem solving techniques and approaches are identified and analyzed to manage workplace issues.</p> <p>3.3 Risks are identified and assessed, and action initiated to manage these to achieve a recognized benefit or advantage to the organization.</p> <p>3.4 Workplace is managed in a way which promotes the development of innovative approaches and outcomes.</p> <p>3.5 Creative and responsive approaches to resource management are used to improve productivity and services, and/or reduce costs.</p> |
| 4. Manage emerging challenges and opportunities | <p>4.1 Future challenges and opportunities are identified in reference to global business situation</p> <p>4.2 The role of technology and its value additions are explained.</p> <p>4.3 Technology and innovation based system is introduced and implemented</p> <p>4.4 Individuals and teams are supported to respond effectively and efficiently to changes in the organization's goals, plans and priorities.</p> |

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| | <p>4.5 Coaching and mentoring are made to assist individuals and teams to develop competencies to handle change efficiently and effectively.</p> <p>4.6 Opportunities are identified and taken as appropriate to make adjustments and respond to the changing needs of customers and the organization.</p> <p>4.7 Information needs of individuals and teams are anticipated and facilitated as part of change implementation and management.</p> <p>4.8 Recommendations are identified, evaluated and negotiated for improving the methods to manage change with appropriate individuals and groups.</p> |
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| Variables | Range |
|---------------------------------------|---|
| Appropriate stakeholders | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Organization directors and other relevant managers • Teams and individual employees who are both directly and indirectly involved in the proposed change • Union/employee representatives or groups • OHS committees • Other people with specialist responsibilities • External stakeholders where appropriate - such as clients, suppliers, industry associations, regulatory and licensing agencies |
| Change resistance reducing techniques | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Education and communication • Participation and involvement • Facilitation and support • Negotiation and agreement • Manipulation and cooptation • Explicit and implicit coercion |
| Needs for growth | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Survival • Economies of scale • Expansion of market • Owners mandate • Technology • Government policy • Self sufficiency |
| Growth Strategies | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Franchising • Outsourcing • Sub-contracting • Merging |
| Risks | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Financial and non-financial risks |
| Information needs | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • New and emerging workplace issues • Implications for current work roles and practices including training and development |

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| | <ul style="list-style-type: none"> • Changes relative to workplace legislation, such as OHS, workplace data such as productivity, inputs/outputs and future projections • Planning documents • Reports • Market trend data • Scenario plans • Customer/competitor data |
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| Evidence Guide | |
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| Critical Aspects of Competence | Demonstrates skills and knowledge to: <ul style="list-style-type: none"> • Participate in planning the introduction and facilitation of change • Manage growth and transition of business • Develop creative and flexible approaches and solutions • Manage emerging challenges and opportunities |
| Underpinning Knowledge and Attitudes | Demonstrate knowledge of: <ul style="list-style-type: none"> • Relevant legislation from all levels of government that affects business operation, especially in regard to occupational health and safety and environmental issues, equal opportunity, industrial relations and anti-discrimination • Growth strategies • The principles and techniques involved in: <ul style="list-style-type: none"> ➢ Change and innovation management ➢ Development of strategies and procedures to implement and facilitate change and innovation • Use of risk management strategies: <ul style="list-style-type: none"> ➢ Identifying hazards, ➢ Assessing risks and implementing risk control measures ➢ Problem identification and resolution ➢ Leadership and mentoring techniques ➢ Management of quality customer service delivery ➢ Consultation and communication techniques ➢ Record keeping and management methods ➢ The sources of change and how they impact ➢ Factors which lead/cause resistance to change ➢ Approaches to managing workplace issues |
| Underpinning Skills | Demonstrate skills on: <ul style="list-style-type: none"> • Communication skills • Planning skills • Managing risk • Team work |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

| Occupational Standard: Legal Metrology Service Level V | |
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| Unit Title | Manage Continuous Improvement Process (Kaizen) |
| Unit Code | TRD LMS5 15 0215 |
| Unit Descriptor | This unit describes the performance, outcomes, knowledge, attitude and skills required to sustain and develop an environment in which continuous improvement, innovation and learning are promoted, rewarded and managed. |

| Elements | Performance criteria |
|---|---|
| 1. Diagnose the current status. | 1.1 Parameters used for study current situation are obtained. 1.2 Internal and external environment is analyzed. 1.3 Problems related to targeted environment is recognized and identified. 1.4 Problems regarding to current situation are analyzed. 1.5 Alternatives are generated. 1.6 Best alternatives are selected. |
| 2. Design an effective continuous improvement process (kaizen). | 2.1 The values, mission and goals of kaizen management system are clarified. 2.2 The kaizen management template and a visual management logo full of purpose and meaning are developed. 2.3 A clear action strategy (master and detailed plans) is defined. 2.4 The most effective and proven kaizen tools are chosen and applied. 2.5 A practical way is identified to involve all employees in Gemba activities (top, middle and bottom). |
| 3. Develop change capability. | 3. 1. Kaizen Promotion Team Structure is developed. 3. 2. The Kaizen Training Plan is defined and started. 3. 3. Supervisors' kaizen capability and habits are developed. 3. 4. Key people are developed in terms of Individual leadership capability . |
| 4. Implement improved processes. | 4.1 Sustainability/continuous improvement are promoted as an essential part of doing business. 4.2 Impacts of change and consequences are addressed for people, and transition plans implemented. 4.3 Objectives, time frames, measures and communication plans are ensured in place to manage implementation. 4.4 Contingency plans are implemented in the event of non-performance. 4.5 Failure is followed-up by prompt investigation and analysis of causes. |

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| | <p>4.6 Emerging challenges and opportunities are managed effectively.</p> <p>4.7 Continuous improvement systems and processes are evaluated regularly.</p> <p>4.8 Improvements are communicated to all relevant groups and individuals.</p> <p>4.9 Opportunities are explored for further development of value stream improvement processes.</p> |
| 5. Establish direction and control. | <p>5.1 A system audit tool is defined and implemented.</p> <p>5.2 The kaizen management system is deployed across all company levels and functions.</p> <p>5.3 Results are checked and corrections made.</p> <p>5.4 Standard operating procedures are developed and maintained.</p> <p>5.5 The recruit, training and evaluation systems are improved and HR practices compensated.</p> |

| Variable | Range |
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| Parameters | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Working condition • Resources may include: <ul style="list-style-type: none"> ➢ Human ➢ Material ➢ Machine • Kaizen elements |
| Kaizen management template | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Visual management board for: <ul style="list-style-type: none"> ➢ displaying characteristic figures, data and graphics ➢ depicting and controlling processes ➢ identifying and marking sources of risks, setting and standards ➢ displaying company's values and goals of kaizen |
| Kaizen tools | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • 5S (a visual workplace management) • 7 QC tools(Cause and Effect Diagram, Check Sheet , Pareto Diagram , Histogram, Scatter Diagram, Control Chart and Flow Chart) • Brainstorming • Basic Industrial Engineering (IE) tools such as time study, motion study, line balancing, work sampling • JIT(JUST IN TIME principles) • MUDA identification and elimination tools • Kanban • Poka-yoke • Takt- time |
| Gemba activities | <p>May include but not limited to:</p> <ul style="list-style-type: none"> • Value-adding activities to satisfy the customer |

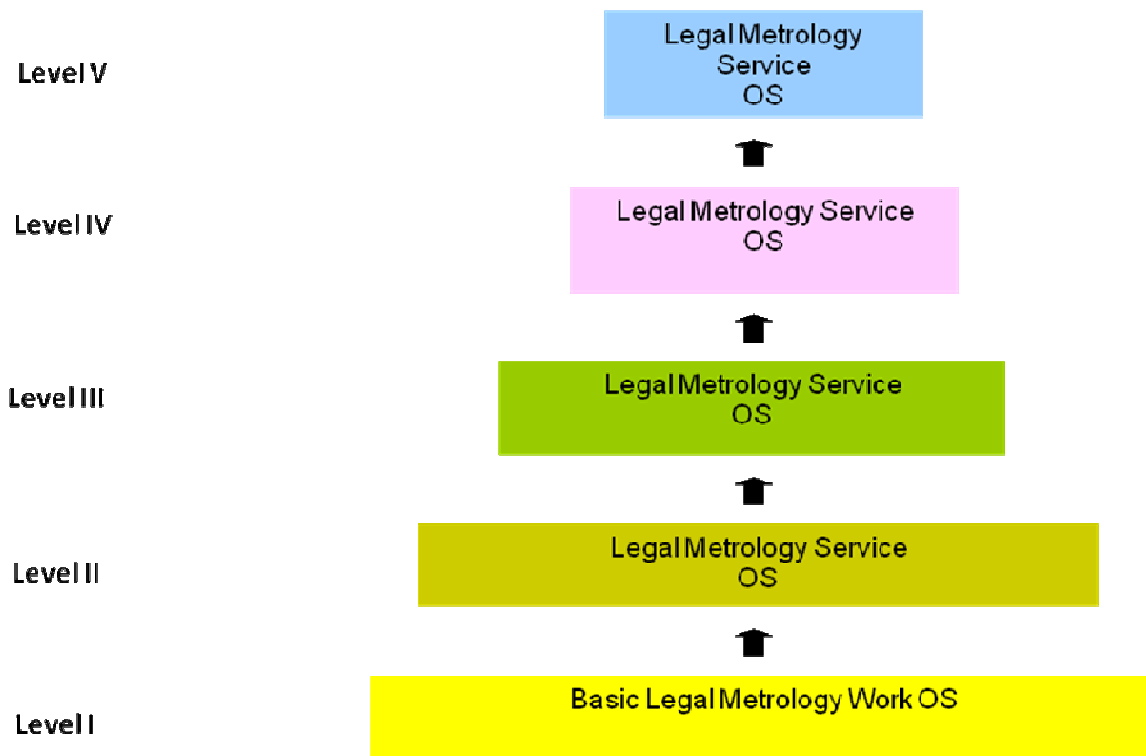
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| | <ul style="list-style-type: none"> Employee autonomous operations (participating in team to identify nonconformity, propose solutions and implement them autonomously) |
| Individual leadership capability | <p>May include but not limited to:</p> <ul style="list-style-type: none"> Personal and interpersonal skills Courage Honour and integrity Energy and drive Strategic skills Operating skills Organizational positioning skills |
| Sustainability/continuous improvement | <p>May include but not limited to:</p> <ul style="list-style-type: none"> Improvements made by following PDCA (Plan, Do, Check and Act) cycle for: <ul style="list-style-type: none"> Improvements in one's own work Saving in energy, material and other resources Improvements in the working environment Improvements in machines and processes Improvements in jigs and tools Improvement in office work Improvements in product quality Ideas for new products Customers services and customer relations |
| System audit tool | <p>May include but not limited to:</p> <ul style="list-style-type: none"> 5S audit Patrol system Kaizen board 5M check lists Key Performance Indicators (KPIs) |
| Standard operating procedure | <p>May include but not limited to:</p> <ul style="list-style-type: none"> Administrative standards for: <ul style="list-style-type: none"> Managing the business Administration Personnel Guidelines Job Descriptions Guidelines for preparing cost information Operation standards for: <ul style="list-style-type: none"> Describing the way a job is done. Help realising Quality, cost, delivery. Addressing the need to satisfy customers. Using the process that's the best. Producing work in the most cost effective manner. Assuring total quality for the customer. |
| HR practices | <p>May include but not limited to:</p> <ul style="list-style-type: none"> Resources may include: <ul style="list-style-type: none"> Recruit and retain high quality people with innovative skills and a good track, record in innovation HR development is used for: <ul style="list-style-type: none"> strategic capability and provide encouragement and facilities for enhancing innovating skills and enhancing |

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| | <p>the intellectual capital of the organization</p> <ul style="list-style-type: none"> • Reward will: <ul style="list-style-type: none"> ➤ Provide financial incentives and rewards and recognition for successful innovation |
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| Evidence Guide | |
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| Critical Aspects of Assessment | <p>Demonstrates skills and knowledge competencies to:</p> <ul style="list-style-type: none"> • Establish policy and cross-functional goals for kaizen • Deploy and implement goals as directed through policy deployment and cross-functional management. • Realize goals through deployment and audits. • Build systems, procedures, and structures conducive to kaizen. • Use kaizen in functional capabilities. • Introduce Kaizen as a corporate strategy • Provide support and direction between allocating resources • Establish, maintain and upgrade standards. • Make employees conscious through training programs. • Assist employees develop skills and tools for problem solving. |
| Underpinning Knowledge and Attitude | <p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> • Quality management and continuous improvement theories • creativity/innovation theories/concepts • competitive systems and practices tools, including: <ul style="list-style-type: none"> ➤ 5S ➤ JUST IN Time (JIT) ➤ mistake proofing ➤ process mapping ➤ establishing customer pull ➤ setting of KPIs/metrics ➤ SOP ➤ Kaizen elements/targets. ➤ identification and elimination of waste/MUDA ➤ continuous improvement processes including implementation, monitoring and evaluation strategies for a whole organization and its value stream ➤ Difference between breakthrough improvement and continuous improvement ➤ organizational goals, processes and structure ➤ approval processes within organization ➤ methods of determining the impact of a change ➤ customer perception of value ➤ Define, Measure, Analyze, Improve and Control (DMAIC) to sustain process |
| Underpinning Skills | <p>Demonstrates Skills to:</p> <ul style="list-style-type: none"> • Use leadership skills to foster a commitment to quality and openness to improvement. • Analyze training needs and implementing training programs • Prepare and maintain quality and audit documentation |

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| | <ul style="list-style-type: none"> • Undertake self-directed problem solving and decision-making on issues of a broad and/or highly specialized nature and in highly varied and/or highly specialized contexts • Communicate at all levels in the organization and to audiences of different levels of literacy and numeracy • Analyze current state/situation of the organization. • Analyze individually and collectively the implementation of competitive systems and practices tools in the organization and determining strategies for improved implementation • Solve highly varied and highly specialized problems related to competitive systems and practices implementation and continuous improvement to root cause • Negotiate with stakeholders, where required, to obtain information required for implementation and refinement of continuous improvements, including management, unions, employees and members of the community. • Review relevant metrics, including all those measures which might be used to determine the performance of the improvement system, including: <ul style="list-style-type: none"> ➤ Key Performance Indicators (KPIs) for existing processes ➤ Quality statistics ➤ Delivery timing and quantity statistics ➤ Process/equipment reliability ('uptime') |
| Resources Implication | Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. |
| Methods of Assessment | Competence may be assessed through: <ul style="list-style-type: none"> • Interview / Written Test • Observation / Demonstration with Oral Questioning |
| Context of Assessment | Competence may be assessed in the work place or in a simulated work place setting. |

LEGAL METROLOGY



Acknowledgement

We wish to extend thanks and appreciation to the Ministry of Trade, partners, academic, and government agencies that took vital role and donated their expertise and resource for the development of this occupational standard.

We would like also to express our appreciation to the Experts from different governmental: Ministry of Trade, Federal Regional Bureaus and nongovernmental like GIZ that made the development of this occupational standard possible.

This occupational standard was developed on February 2015 at Addis Ababa, Ethiopia.

COMMENT TEMPLATE

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| The Federal TVET Agency values your feedback of the document. |
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| Please , leave a comment. |
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Thank you for your time and consideration to complete this. For additional comments, please contact us on:

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- **E-mail: bizunehdebebe@yahoo.com/ Abebaw_maemer@yahoo.com /won_get@yahoo.com.**