

PERFORM WORKSHOP PRACTICE

UNIT CODE: 0713441 07A

TVET CDACC UNIT CODE: ENG/OS/MDE/CC/02/5/MA

UNIT DESCRIPTION

This unit covers the competencies required to perform workshop practice. It involves: applying workshop safety practice, controlling OSH hazards, implementing OSH programs, controlling environmental pollution, demonstrating sustainable resource use, implementing specific environmental programs, monitoring activities on environmental protection programs, preparing workshop tools, equipment and materials, using workshop machines and tools and storing electrical tools and materials.

ELEMENTS	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range.</i>
1. Apply workshop safety practice	1.1 PPEs are applied as per work requirement 1.2 Workshop safety rules are applied as per work procedure 1.3 First Aid is carried out as per work procedure 1.4 Workshop safety hazards are prevented as per work procedure 1.5 Workshop safety risk assessment is conducted as per work procedure 1.6 Fire drills are carried out as per workplace procedure

2. Control OSH hazards	<p>2.1 Risks <i>hazards and emergency</i> are evaluated based on <i>hazard indicators</i></p> <p>2.2 <i>OSH concerns</i> raised by workers are addressed as per legal requirements.</p> <p>2.3 Hazard <i>prevention and control measures</i> are implemented as per legal requirement.</p> <p>2.4 <i>Contingency measures and emergency procedure</i> are recognized and implemented in accordance with organization procedures.</p>
3. Implement OSH programs	<p>3.1 Company OSH programs are implemented as per legal requirements.</p> <p>3.2 Workers are trained on OSH standards and procedures as per legal requirements</p> <p>3.3 <i>OSH-related records</i> are maintained as per legal requirements.</p>
4. Control environmental pollution	<p>4.1 <i>Environmental pollution control measures</i> are implemented in accordance with NEEMA</p> <p>4.2 Procedures for solid waste management are observed as per Environmental Management and Coordination Act 1999</p> <p>4.3 Methods for minimizing noise pollution is complied as per Noise and Excessive Vibration <i>Pollution and Control Regulations, 2009</i></p>
5. Demonstrate sustainable resource use	<p>5.1 Methods for minimizing wastage are complied with based on organizational waste management guide</p> <p>5.2 <i>Waste management procedures</i> are employed as per principles of 3Rs (Reduce, Reuse, Recycle)</p> <p>5.3 Methods for economizing and reducing resource consumption are practiced as per the Constitution of Kenya 2010 Article 69</p>

	5.4 Develop <i>resource</i> conservation plan as per work procedures
6. Implement specific environmental programs	<p>6.1 Individual responsibilities on implement specific environmental programs are determined and performed as per activities identified.</p> <p>6.2 Problems encountered are resolved in accordance with <i>organizations' policies and guidelines</i></p> <p>6.3 Stakeholders are consulted as per company guidelines</p>
7. Monitor activities on Environmental protection Programs	<p>7.1 Activities are periodically monitored and evaluated as per objectives of the environmental program.</p> <p>7.2 Recommendations are submitted as per findings.</p> <p>7.3 Management support systems are set established to sustain and enhance the program.</p> <p>7.4 Environmental incidents are reported to concerned proper authorities.</p>
8. Prepare workshop tools, equipment and materials	<p>8.1 Materials and tools are identified as per the work specification.</p> <p>8.2 Required tools, equipment and materials are prepared as per job specification.</p> <p>8.3 Safety measures are adhered to when handling tools, equipment and materials.</p>
9. Use of workshop machines and tools	<p>9.1 Health and safety procedures are applied as per work procedure.</p> <p>9.2 Workshop machines are identified as per job specification</p> <p>9.3 Tools are used as per the job specification.</p>

	9.4 Machine is operated as per manufacturer's specification.
10. Store Electrical tools and material	<p>10.1 Tools and equipment are cleaned as per standard operating procedure.</p> <p>10.2 Machine is cleaned as per manufacturer's specification.</p> <p>10.3 Tools and equipment are checked against the issuing list as per workplace procedure.</p> <p>10.4 Tools and equipment are stored out as per their standard operating procedure.</p> <p>10.5 Tools, equipment and machines are maintained as per manufacturer's specification.</p> <p>10.6 Waste management is performed as per the EHS.</p>

REQUIRED SKILLS AND KNOWLEDGE

This section describes the knowledge and skills required for this unit of competency.

Required skills

The individual needs to demonstrate the following skills:

- Measuring
- Recording
- Monitoring
- Writing
- Interpersonal
- Presentation
- Risk assessment
- Evaluation
- Critical thinking
- Negotiation
- Electrical Installation

- Wiring systems
- Troubleshooting
- Survey and data capture
- Electrical system testing
- Interpretation of maintenance manuals
- Problem solving
- Use of electrical & mechanical tools
- Analytical
- First aid
- Planning
- Communications
- Digital literacy
- Time management
- Report writing
- Decision making
- Soldering

Required knowledge

The individual needs to demonstrate knowledge of:

- PPEs
- Environmental regulations
- OSH standards
- Pollution
- Waste management
- Principle of 3Rs
- Types of resources
- Environmental hazards
- Regulatory requirements
- Various laws in electrical engineering
- Safety procedures and practices

- Electrical symbols and their meanings
- Electrical standards
- Digital and analogue instruments
- Analogue electronics
- Digital electronics
- Instrumentation and calibration
- Sensors and transducers
- Physical quantities
- Measurement

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
1. Hazards may include but not limited to:	<ul style="list-style-type: none"> ● Physical hazards – impact, illumination, pressure, noise, vibration, extreme temperature, radiation. ● Biological hazards- bacteria, viruses, plants, parasites, mites, molds, fungi, insects ● Chemical hazards – dusts, fibers, mists, fumes, smoke, gasses, vapors ● Ergonomics ● Psychological factors – over exertion excessive force, awkward static positions, fatigue, direct pressure, varying metabolic cycles. ● Physiological factors – monotony, personal relationship, work out cycle. ● Safety hazards (unsafe workplace condition) – confined space, excavations, falling objects, gas

	<p>leaks, electrical, poor storage of materials and waste, spillage, waste and debris.</p> <ul style="list-style-type: none"> Unsafe workers' act (Smoking in off-limited areas, Substance and alcohol abuse at work)
2. Hazard indicators may include but not limited to:	<ul style="list-style-type: none"> Increased of incidents of accidents, injuries. Increased occurrence of sickness or health complaints symptoms Common complaints of workers related to OSH High absenteeism for work-related reasons
3. OSH concerns indicators may include but not limited to:	<ul style="list-style-type: none"> Workers' experience observance on presence of work hazards. Unsafe unhealthy administrative arrangements (prolonged work hours, no break time, constant overtime, scheduling of tasks). Reasons for compliance non-compliance to use of PPEs or other OSH procedures policies guidelines.
4. prevention and control measures may include but not limited to	<ul style="list-style-type: none"> Appropriate risk controls in order of impact are as follows: Eliminate the hazard altogether (i.e., get rid of the dangerous machine). Isolate the hazard from anyone who could be harmed (i.e., keep the machine in a closed room and operate it remotely; barricade an unsafe area off). Substitute the hazard with a safer alternative (i.e., replace the machine with a safer one). Use administrative controls to reduce the risk (i.e., train workers how to use equipment safely; train workers about the risks of harassment; issue signage).

	<ul style="list-style-type: none"> • Use engineering controls to reduce the risk (i.e., attach guards to the machine to protect users) • Use personal protective equipment (i.e., wear gloves and goggles when using the machine).
5. Contingency measures may include but not limited to	<ul style="list-style-type: none"> • Evacuation • Isolation • Decontamination • (Calling designed) emergency personnel
6. Emergency may include but not limited to	<ul style="list-style-type: none"> • Chemical spills • Equipment vehicle accidents • Explosion • Fire • Gas leak • Injury to personnel • Structural collapse • Toxic and or flammable vapors emission
7. Emergency procedures may include but not limited to	<ul style="list-style-type: none"> • Fire drill • Earthquake drill • Basic life support CPR • First aid • Spillage control • Decontamination of chemical and toxics • Disaster preparedness • Use of fire extinguishers
8. PPEs may include but not limited to	<ul style="list-style-type: none"> • Mask • Gloves • Goggles • Safety hat • Overall

	<ul style="list-style-type: none"> ● Ear protector
9. OSH-related records may include but not limited to	<ul style="list-style-type: none"> ● Medical Health records ● Incident accident reports ● Sickness notifications sick leave application ● OSH-related trainings obtained
10. Environmental pollution Control measures may include but not limited to	<ul style="list-style-type: none"> ● Methods for minimizing or stopping spread and ingestion of airborne particles ● Methods for minimizing or stopping spread and ingestion of gases and fumes ● Methods for minimizing or stopping spread and ingestion of liquid wastes
11. Waste management procedures may include but not limited to	<ul style="list-style-type: none"> ● Sorting ● Storing of items ● Recycling of items ● Disposal of items
12. Resource may include but not limited to	<ul style="list-style-type: none"> ● Electricity ● Water ● Fuel ● Telecommunications ● Supplies ● Materials
13. Organizations' policies and guidelines may include but not limited to	<ul style="list-style-type: none"> ● supply chain, procurement and purchasing ● quality assurance ● making recommendations and seeking approvals

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and understanding and range.

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Adhered to workshop safety regulations 1.2 Handled tools, instruments and equipment are as per manufacturer's manuals 1.3 Tested functionality of tools and instruments 1.4 Prepared a work piece using right Machine as per the task. 1.5 Repaired Replaced faulty components and tools as per the expected functionality 1.1 Evaluated workplace hazards based on legal requirements. 1.2 Addressed OSH concerns raised by workers as per legal requirements. 1.1 Implemented hazard prevention and control measures as per legal requirement. 1.2 Conducted risk assessment as per legal requirement. 1.3 Implemented company OSH programs as per legal requirements. 1.4 Maintained OSH-related records as per legal requirements 1.1 Controlled environmental hazard 1.2 Controlled environmental pollution 1.3 Demonstrated sustainable resource use 1.4 Demonstrated knowledge of environmental legislations and local ordinances according to the different environmental issues concerns. 1.1 Implemented and monitored environmental practices on a periodic basis as per company guidelines 1.2 Recommended solutions for the improvement of the program 1.5 Reported to proper authorities any environmental incidents
2. Resource Implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Electrical installation tool kit

	<p>2.2 Testing equipment</p> <p>2.3 Measuring equipment</p> <p>2.4 First Aid kit</p> <p>2.5 Access to relevant workplace where assessment can take place</p> <p>2.6 Appropriately simulated environment where assessment can take place</p> <p>2.7 Workplace with storage facilities</p> <p>2.8 Tools, materials and equipment relevant to the tasks (e.g. cleaning tools, cleaning materials, trash bags)</p> <p>2.9 PPE, manuals and references</p> <p>2.10 Legislation, policies, procedures, protocols and local ordinances relating to environmental protection</p> <p>2.11 Case studies scenarios relating to environmental Protection</p>
3. Methods of Assessment	<p>Competency may be assessed through:</p> <p>3.1 Practical</p> <p>3.2 Demonstration</p> <p>3.3 Oral tests</p> <p>3.4 Written test</p> <p>3.5 Portfolio of Evidence</p> <p>3.6 Third party report</p>
4. Context of Assessment	<p>4.1 Competency may be assessed individually in the actual workplace or simulated setting of the actual work place</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>