

## WORKSHOP TECHNOLOGY

**UNIT CODE:** ENG/CU/ET/CR/03/6/A

### Relationship to Occupational Standards

This unit addresses the unit of competency: Perform Workshop Processes

**Duration of Unit:** 60 hours

### Unit Description

This unit specifies the competencies required to manage an electrical workshop. It includes applying workshop safety, use of workshop tools, instruments and equipment, preparation of workshop tools and instruments for an electrical installation practical, storage of electrical tools and materials after practical and troubleshooting and repair/ replacement of workshop tools and equipment

### Summary of Learning Outcomes

1. Apply workshop safety
2. Use of workshop tools, Instruments and equipment
3. Prepare workshop tools and instruments for an Electrical installation practical
4. Prepare the workshop for an Electrical practical
5. Store Electrical tools and materials after practical
6. Troubleshoot and repair workshop tools and equipment

### Learning Outcomes, Content and Suggested Assessment Methods:

Learning Outcome	Content	Suggested Assessment Methods
1. Apply workshop safety	<ul style="list-style-type: none"><li>• Meaning of PPE<ul style="list-style-type: none"><li>• Standard operating procedure in PPE</li></ul></li><li>• Workshop rules</li><li>• Electrical hazards e.g.<ul style="list-style-type: none"><li>• Electric shock.</li></ul></li><li>• Fire<ul style="list-style-type: none"><li>• Classes of fire</li><li>• Causes of fire</li><li>• Various methods of fire</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Oral questioning</li><li>• Written tests</li></ul>

	<p>extinguishing</p> <ul style="list-style-type: none"> <li>• First Aid</li> </ul>	
2. Use of workshop tools, Instruments and equipment	<ul style="list-style-type: none"> <li>• Meaning of workshop tools, instruments and equipment</li> <li>• Uses of workshop tools, Instruments and equipment</li> <li>• Classification of workshop tools and equipment</li> <li>• Care and Maintenance of workshop tools and Instruments</li> </ul>	<ul style="list-style-type: none"> <li>• Oral questioning</li> <li>• Practical tests</li> <li>• Written tests</li> </ul>
3. Prepare workshop tools and instruments for an Electrical installation practical	<ul style="list-style-type: none"> <li>• Tools and instruments for an Electrical practical <ul style="list-style-type: none"> <li>• Preparation of a list of tools and instruments for an Electrical practical.</li> <li>• Issuing and confirmation of tools and instruments before and after practical</li> </ul> </li> <li>• Testing of practical tools and Instruments</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Oral questioning</li> <li>• Practical tests</li> <li>• Written tests</li> </ul>
4. Prepare workshop for an Electrical practical	<ul style="list-style-type: none"> <li>• Practical stations</li> <li>• Interpretation of a list of practical material</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Oral questioning</li> <li>• Practical tests</li> <li>• Written tests</li> </ul>
5. Store Electrical tools and materials after practical	<ul style="list-style-type: none"> <li>• Classification of workshop tools and instruments.</li> <li>• Storage of workshop Tools and equipment</li> <li>• Waste disposal</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Oral questioning</li> <li>• Practical tests</li> <li>• Written tests</li> </ul>
6. Troubleshoot and repair/replace workshop tools and equipment	<ul style="list-style-type: none"> <li>• Meaning of troubleshooting</li> <li>• Common faults in Electrical equipment Fault diagnosis procedure</li> <li>• Repair/Replace of components in Electrical equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Oral questioning</li> <li>• Practical tests</li> <li>• Written tests</li> </ul>

### Suggested Methods of Instruction

- Demonstration by trainer
- Practice by the trainee
- Field trips
- On-job-training

- Discussions

## **Recommended Resources**

### **Tools**

- Set of screw drivers
- Pliers
- Phase testers
- Multimeter

### **Materials and supplies**

- Stationery
- Cables
- Lubricants
- Service parts

### **Equipment**

- PPE –hand gloves, dust coat, dust masks
- Multimeter
- Clamp meter
- Earth electrode resistance meter
- Phase sequence meter

### **Reference materials**

- IEE regulations
- Organizational procedures

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