

ELECTRICAL INSTALLATION BREAKDOWN MAINTENANCE

UNIT CODE: ENG/CU/EI/CR/03/4/A

Relationship to Occupational Standards

This unit addresses the unit of competency: Conduct Electrical Installation Breakdown Maintenance

Duration of Unit: 40 hours

Unit Description

This unit specifies the competencies required to conduct breakdown maintenance of an electrical installation. It includes fault identification, repairing, testing and generating maintenance report.

Summary of Learning Outcomes

1. Identify system failure
2. Troubleshoot cause of failure
3. Repair the installation
4. Test the repaired system

Learning Outcomes, Content and Suggested Assessment Methods:

Learning Outcome	Content	Suggested Assessment Methods
1. Identify installation failure	<ul style="list-style-type: none"><input type="checkbox"/> Gathering information<ul style="list-style-type: none">• Principle of operation• Visual inspection• Interview of users<input type="checkbox"/> Types of failures<ul style="list-style-type: none">• Partial• Total<input type="checkbox"/> Referring to as-built drawings and manuals	<ul style="list-style-type: none"><input type="checkbox"/> Oral questioning<input type="checkbox"/> Written tests
2. Troubleshoot cause of failure.	<ul style="list-style-type: none"><input type="checkbox"/> Conducting fault diagnosis e.g.<ul style="list-style-type: none">• Open circuit• Short circuit	<ul style="list-style-type: none"><input type="checkbox"/> Oral questioning<input type="checkbox"/> Practical tests<input type="checkbox"/> Written tests

	<ul style="list-style-type: none"> • Earth fault • Mechanical faults <input type="checkbox"/> Identification of tools, equipment and materials for repair/replace <input type="checkbox"/> Specification of tools <input type="checkbox"/> Recording of installation failure results <ul style="list-style-type: none"> • Parameters e.g. <ul style="list-style-type: none"> ➤ Voltage ➤ Current ➤ Resistance 	
3. Repair the installation	<input type="checkbox"/> Repair/Replace <ul style="list-style-type: none"> • Meaning • Power isolation • Conducting repair activities • Recording repair activities 	<input type="checkbox"/> Observation <input type="checkbox"/> Oral questioning <input type="checkbox"/> Practical tests <input type="checkbox"/> Written tests
4. Test the repaired system	<input type="checkbox"/> Identification of test and test points <ul style="list-style-type: none"> • Test parameters e.g. <ul style="list-style-type: none"> ➤ Voltage ➤ Resistance ➤ Current <input type="checkbox"/> Prepare and document maintenance report	<input type="checkbox"/> Observation <input type="checkbox"/> Oral questioning <input type="checkbox"/> Practical tests <input type="checkbox"/> Written tests

Suggested Methods of Delivery

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

Recommended Resources

Tools <ul style="list-style-type: none"> • Set of screw drivers • Pliers • Phase testers • Multimeter 	Materials and supplies <ul style="list-style-type: none"> • Stationery • Cables • Lubricants • Service parts
Equipment	Reference materials

<ul style="list-style-type: none">• PPE –hand gloves, dust coat, dust masks• Multimeter• Clamp meter• Earth electrode resistance meter• Phase sequence meter	<ul style="list-style-type: none">• IEE regulations• Organizational procedures manual
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