

## APPLY DIGITAL SKILLS IN AGRICULTURAL SYSTEMS

**UNIT CODE: ENG/OS/AME/4/CR/03/4/A**

### UNIT DESCRIPTION

Learners will describe the scientific principles of magnetism and electricity as it applies to electronic components and systems, perform troubleshooting procedures on electronic components and systems, demonstrate the use of electronic diagnostic control tools to diagnose and calibrate various electronic agricultural equipment. Learners will perform maintenance operations on Agricultural Digital Systems, including software and hardware care and updates.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
These describe the <b>key outcomes</b> which make up workplace function (to be stated in active voice)	These are <b>assessable statements</b> which specify the required level of performance for each of the elements (to be stated in passive voice) <i><b>Bold and italicized terms are elaborated in the Range</b></i>
1. Apply theoretical knowledge related to Agricultural Digital Systems	1.1 Describe principles of magnetism. 1.2 Describe principles of electricity 1.3 Identify the function of electricity and magnetism within <i><b>electrical and electronic components</b></i> and systems 1.4 Identify principles of Agricultural Digital Systems. 1.5 Apply computer control theory as it pertains to Agricultural Digital Systems
2. Perform troubleshooting procedures on electronic components and systems	2.1 Select <i><b>PPE</b></i> according to specific context and policy 2.2 Identify electronic diagnostic control tools for specific contexts 2.3 Connect selected electronic <i><b>diagnostic tools</b></i> with agricultural equipment 2.4 Differentiate troubleshooting codes in electronic <i><b>diagnostics</b></i>
3. Operate electronic diagnostic control tools	3.1 Identify <i><b>levels of access</b></i> to electronic diagnostic tools 3.2 Perform selected electronic calibration of equipment at the operator level 3.3 Describe selected electronic calibration of equipment at the service center level
4. Perform service and maintenance operations on agricultural digital systems	4.1 Describe care and maintenance of <i><b>electronic networking diagnostic control tools</b></i> 4.2 Perform software updates on electronic diagnostic control tools

5. Evaluate the operations of agricultural digital systems	5.1 Select <b>PPE</b> according to specific contexts and policy 5.2 Identify electronic diagnostic control tools 5.3 Connect selected electronic <b>diagnostic tools</b> with agricultural equipment 5.4 Interpret results from selected electronic diagnostic tools
--	---

**RANGE**

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

<b>Variable</b>	<b>Range</b> may include but are not limited to:)
PPE include but are not limited to	<ul style="list-style-type: none"> <li>• Fire extinguishing equipment</li> <li>• First aid stations</li> <li>• Eye wash stations</li> <li>• Aprons</li> <li>• Cloves</li> <li>• Goggles</li> <li>• First aid kit</li> <li>• Masks</li> <li>• Safety boots</li> </ul>
Electrical and electronic components	<ul style="list-style-type: none"> <li>• Batteries</li> <li>• Sensors</li> <li>• Regulators</li> <li>• Heaters</li> <li>• Led</li> <li>• Printed circuit boards</li> <li>• Communication plugs</li> </ul>
Diagnostics include but are not limited to	<ul style="list-style-type: none"> <li>• Circuit tests</li> <li>• Component tests</li> <li>• Service code diagnostics</li> </ul>
Levels of access	<ul style="list-style-type: none"> <li>• Operator</li> <li>• Service center</li> <li>• Manufacturer</li> </ul>
Electronic networking communication tools and testing equipment include but are not limited to	<ul style="list-style-type: none"> <li>• Digital multi-meters</li> <li>• Test lights</li> <li>• Laptop diagnostic systems</li> <li>• Onboard diagnostic systems</li> </ul>

## REQUIRED SKILLS AND KNOWLEDGE

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

### Required Skills

The individual needs to demonstrate the following skills:

- Safety skills
- Numeracy skills
- Typing skills
- Computing skills
- Interpretation skills
- Communication skills

### Required Knowledge

The individual needs to demonstrate knowledge of:

- Safe working practices and procedures
- Identify different farm machinery and implement
- Safety requirements and precautions
- Use and care of farm tools
- Use of calculator
- Basic use of computer

## EVIDENCE GUIDE

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

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Describe the scientific principles of magnetism and electricity as it applies to electronic components and systems 1.2 Demonstrate the principles of Agricultural Digital Systems 1.3 Perform troubleshooting procedures on electronic components and systems 1.4 Demonstrate the use of electronic diagnostic control tools to calibrate various electronic agricultural equipment 1.5 Perform maintenance operations on Agricultural Digital Systems
2. Resource Implications	The following resources must be provided: 2.1 A functional workshop with basic digital networking, tools, equipment, materials and supplies. 2.2 References and manuals including working drawing 2.3 Personal protective equipment
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Observation 3.2 Oral 3.3 Written 3.4 Third party report

4. Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

easytvvet.com