

FARM TRACTOR

UNIT CODE: ENG/CU/AME/CR/01/4

Relationship to Occupational Standards

This unit addresses the unit of competency: Operate and maintain farm tractor

Duration of the unit; 100 hours

Unit description:

This unit specifies the competencies required performing safe operation of farm tractors and the operation tractor systems. It also involves maintenance of selected systems of farm tractors and evaluation of the performance of tractor systems. This unit involves performing adjustments to tractor components and systems.

Summary of Learning Outcomes:

1. Perform safe operation of farm tractors
2. Operate tractor systems
3. Perform maintenance on selected systems of farm tractors
4. Evaluate the performance of tractor systems
5. Perform adjustments to tractor components and systems

Learning Outcomes, Content and Suggested Assessment Methods

Learning outcome	Content	Suggested assessment methods
1. Perform safe operation of farm tractors	<ul style="list-style-type: none">• The observance of Kenyan regulations concerned with health, safety and the environment;• The use of personal protective equipment and clothing (PPE) used throughout work activities;• Potential safety hazards in the work environment• Pre-operation checks on;<ul style="list-style-type: none">○ Cooling system○ Electrical system	<ul style="list-style-type: none">• Observation• Practical exercises• Oral• Written• Third party report

	<ul style="list-style-type: none"> ○ Transmission system ○ Hydraulic system ○ Lubrication system ○ Fuel system ○ Steering system <ul style="list-style-type: none"> ● Perform safe driving of tractor 	
2. Operate tractor systems	<p>Identify selected tractor systems</p> <ul style="list-style-type: none"> ○ Cooling system ○ Electrical system ○ Transmission system ○ Hydraulic system ○ Power take-off (PTO) ○ Lubrication system ○ Fuel system ○ Steering system ○ Hitches <p>Test selected tractor systems</p> <ul style="list-style-type: none"> ● Perform operation of selected tractor systems 	<ul style="list-style-type: none"> ● Observation ● Practical exercises ● Oral ● Written ● Third party report
3. Perform maintenance on selected systems of farm tractors	<ul style="list-style-type: none"> ● Select appropriate tools and equipment for maintenance of selected tractor systems ● Perform maintenance procedures for selected tractor systems <ul style="list-style-type: none"> ▪ Cooling system ▪ Electrical system ▪ Transmission system ▪ Hydraulic system ▪ Power take-off (PTO) ▪ Lubrication system ▪ Fuel system ▪ Steering system ▪ Hitches ● Perform routine service on selected tractor systems 	<ul style="list-style-type: none"> ● Observation ● Practical exercises ● Oral ● Written ● Third party report
4. Evaluate the performance of tractor systems	<ul style="list-style-type: none"> ● Perform basic diagnostics on selected tractor systems <ul style="list-style-type: none"> ○ Cooling system ○ Electrical system ○ Transmission system ○ Hydraulic system ○ Power take-off (PTO) ○ Lubrication system ○ Fuel system 	<ul style="list-style-type: none"> ● Observation ● Practical exercises ● Oral ● Written ● Third party report

	<ul style="list-style-type: none"> ○ Steering system ○ Hitches ● Identify common malfunctions of selected tractor systems ● Interpret results of the diagnostic tests of selected tractor systems 	
5. Perform adjustments to tractor components and systems	<ul style="list-style-type: none"> ● Perform adjustments for optimal performance of selected tractor systems ● Cooling system ● Electrical system ● Transmission system ● Hydraulic system ● Power take-off (PTO) ● Lubrication system ● Fuel system ● Steering system ● Hitches ● Perform tests of selected tractor systems to validate adjustments 	<ul style="list-style-type: none"> ● Observation ● Practical exercises ● Oral ● Written ● Third party report

Suggested Methods of Delivery

- Presentations and practical demonstrations by trainer;
- Guided learner activities and research to develop underpinning knowledge;
- Supervised activities and projects in a workshop;

The delivery may also be supplemented and enhanced by the following, if the opportunity allows:

- Visiting lecturer/trainer from the Agricultural Machinery service and repair sector;
- Industrial visits.

Recommended Resources

<p>Tools</p> <p>Comprehensive set of hand tools for tractors maintenance and repair.</p>
<p>Equipment</p> <ul style="list-style-type: none"> ● A fully equipped agricultural machinery and equipment maintenance workshop; ● Fully operational tractor ● Internet access to manufacturers' technical information; ● Personal protective equipment (PPE) and suitable coverings to protect vehicles; ● Facilities for the disposal of waste oil and used parts; ● Customer database and systems for recording maintenance records.

Materials and supplies

Consumables for maintaining agricultural machinery and equipment including:

- Lubricants
- Fluids
- Replacement parts
- Cleaning materials

Reference materials

- Manufacturers service manuals for tractors that are being serviced;
- Appropriate agricultural engineering text books available on numerous websites
e.g.
 - Tractor Construction and Use Regulations;
 - Aftermarket manufacturers manuals

easyvet.com