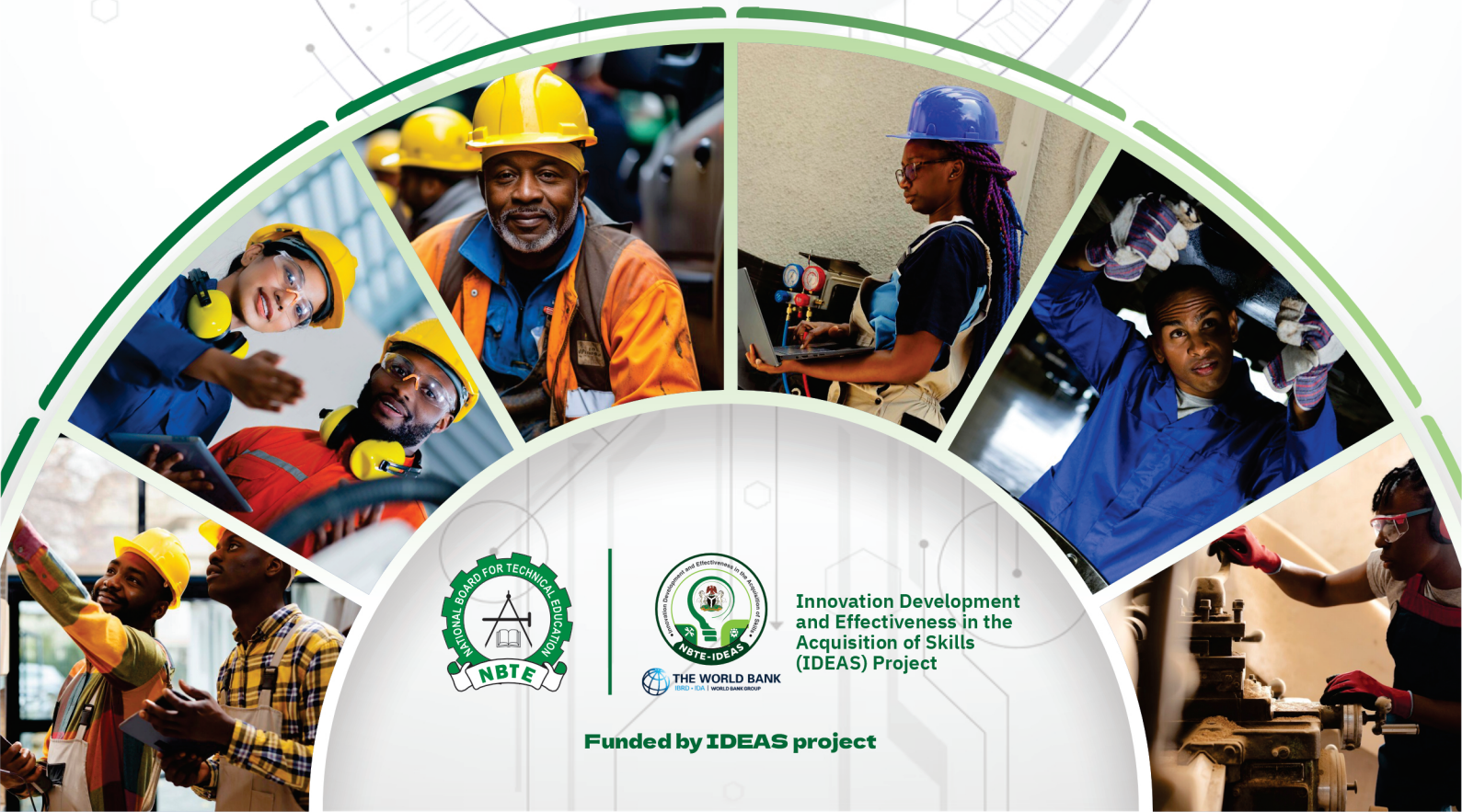
FEDERAL MINISTRY OF EDUCATION

National Skills Qualifications FOR TRICYCLE ASSEMBLING REPAIRS AND MAINTENANCE

LEVEL 1, 2 & 3

February, 2025



NATIONAL BOARD FOR TECHNICAL EDUCATION
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Innovation Development and Effectiveness in the Acquisition of Skills (IDEAS) Project

THE WORLD BANK

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National Board for Technical Education

Plot B, Bida Road, P.M.B. 2239, Kaduna, Nigeria

NATIONAL SKILLS QUALIFICATION

IN

AUTOMOTIVE SECTOR

TRICYCLE ASSEMBLING, REPAIRS AND MAINTENANCE

LEVEL 1-3

FEBRUARY, 2025

Contents

OVERVIEW

This qualification is for those interested in developing a career in Automobile Mechanic Works for the award of National Skills Qualifications (NSQ). It is aimed at producing specialists in Automobile Mechanics and repairs at NSQ Levels 1, 2 and 3 with the competencies to repair automobile faults professionally: while complying with relevant regulatory requirements, health and safety.
This qualification is subject to review as and when the need arises.

GENERAL INFORMATION

PURPOSE OF THE QUALIFICATION

This qualification is designed for individuals who are interested in developing a career in the Tricycle Assembling, Repairs and Maintenance.

ENTRY REQUIREMENTS

Candidates must fulfil the following requirements:

1. Be at least 15 years of age
2. Be medically fit (i.e., free from; visual problem, blood pressure and blood sugar)
3. Be mentally fit
4. Have completed Primary School education and or vocational training program related to the intended area of training.
5. A candidate may be considered in lieu of No. 4. above, if he or she has basic literacy and numeracy skills or can relatively read and write in the language of Instruction of the program.

Note:

This is a 180credit hour program, and learners are required to attain all the credit units. Each Credit is approximately equivalent to 10 Guided Learning Hours (GLH).

GENERAL OBJECTIVES

At the end of the program, the trainee should be able to demonstrate knowledge and skills in:

1. Demonstrate Health, Safety and Environment
2. Apply Communication Process in an Automotive Environment
3. Demonstrate Team Work
4. Identify and use Basics Tools in Tricycle Assembling and Repair Maintenance
5. Identify and use Basic materials use in tricycle maintenance, assembling and repairs
6. Carryout Fastening and Joining Techniques in Tricycle Assembling and Repair Maintenance
7. Carry out Engine System Maintenance of Tricycle

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real work environment in which learning and human development is carried out. Simulation is allowed in this units and level (where/when necessary).

Assessment methods to be used include:

1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS) or Reflective Practice (RP)
5. Recognition of Prior Learning (RPL)

NATIONAL SKILLS QUALIFICATION

IN

AUTOMOTIVE SECTOR

TRICYCLE ASSEMBLING, REPAIRS AND MAINTENANCE

LEVEL 1

FEBRUARY, 2025

AUTOMOTIVE SECTOR
TRICYCLE ASSEMBLING, REPAIRS AND MAINTENANCE

SUMMARY OF LEVEL 1 (AS CLASSIFIED)

MANDATORY UNITS

S/NO /UNIT	REFERENCE NO.	NSQ TITLE	CREDIT VALUE	TOTAL LEARNING HOUR	REMARKS
1	AUT/TRC/001/L1	Health, Safety and Environment	2	20	Mandatory
2	AUT/TRC/002/L1	Communication process in Auto Tricycle	2	20	Mandatory
3	AUT/TRC/003/L1	Basic Tools in Tricycle Assembling and Repair Maintenance	3	30	Mandatory
4	AUT/TRC/004/L1	Basic materials use in tricycle maintenance, assembling and repairs	3	30	Mandatory
5	AUT/TRC/005/L1	Fastening and Joining Techniques in Tricycle Assembling and Repair Maintenance	3	30	Mandatory
6	AUT/TRC/006/L1	Team work	1	10	Mandatory
7	AUT/TRC/007/L1	Engine System Maintenance of Tricycle	4	40	Mandatory
		TOTAL CREDIT VALUE/HOURS	2	180	

Purpose of the Qualification:
This Qualification covers the competence and knowledge learners need to identify in maintenance, service and general repairs of auto tricycles. It includes identification of faults and replacement of mechanical and electrical components safely. The qualification also ensures that the learner is aware of health & safety, the environments, and appropriate communication. The candidate should be able identify tools and equipment for the purpose of maintenance.

Unit: 1 HEALTH, SAFETY AND ENVIRONMENT (HSE) IN AUTOMOTIVE TRI CYCLE INDUSTRY

Unit reference number: AUT/TRC/001/L1

QCF level: 1

Credit value: 2

Guided learning hours: 20

Purpose of the Unit: This unit is about the application of knowledge and skills to competently carryout daily activities in an automotive tricycle workshop while observing relevant safety procedures and regulations.

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real automotive tricycle workplace environment where automotive activities are carried out. Simulation is not allowed in this unit and level.

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Project
6. Work product

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
L.O:1Employ safe work practices and instructions	1.1	Identify safe work practice and instructions.									
	1.2	Identify safety signs and symbols.									
	1.3	Identify signs and symbols correctly									
	1.4	Explain safe work practices and instructions									
	1.5	Work in accordance with health and safety practices.									
L.O 2: Identify safe ty hazards and risks at work	2.1	Identify work environment hazards									
	2.2	State the types of hazard and risks in surface area									
	2.3	State the types of hazards and risks in height and depth									
	2.4	Explain the regulations as it relates to hazards and risk in work environment.									
L.O.3: State the use of Personal Protective Equipment (PPE)	3.1	Identify the types of PPEs									
	3.2	Explain PPEs in accordance with instructions.									
	3.3	Identify appropriate PPEs.									
	3.4	Service PPEs after use.									

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
L.O. 4: Apply appropriate measures during accident/injury.	4.1	Identify first aid facility									
	4.2	Identify basic dressing materials									
	4.3	Comply with supervisors' instructions.									
	4.4	Communicate accident/injury to the appropriate supervisor									
L.O. 5: Observe safe working habit and clean work environment	5.1	Identify safe access and exit routes in the work environment									
	5.2	Identify appropriate working tools, materials and equipment									
	5.3	Identify the use of tools and equipment safely in accordance with the supervisor's instructions									
	5.4	Gather all tools, equipment and unused materials for appropriate storage									
	5.5	Explain general housekeeping of work environment									
	5.6	Dispose all wastes appropriately to designated waste facilities									
L.O: 6. Apply the appropriate methods of lifting, loading/offloading and stacking of materials	6.1	Identify lifting and stacking techniques									
	6.2	Explain appropriately lifting techniques in loading and offloading of materials without assistance									
	6.3	Select correct lifting and loading techniques with mechanical assistance									
	6.4	Gather materials correctly									
L.O: 7 State the effects of materials on self and work environment	7.1	Explain the effect of gas, liquid and solid materials on self and work environment									
	7.2	Identify various types of protection against gaseous, liquid, and solid materials on self and work environment									
	7.3	Explain appropriate legislative standards with regards to safety									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT 2: COMMUNICATION IN AUTO TRICYCLE WORKSHOP

Unit reference number: AUT/TRC/002/L1

QCF level: 1

Credit value: 2

Guided learning hours: 20

Unit Purpose: To establish an effective communication system that is responsive to change in meeting workers and client's needs, in work environment

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real automotive tricycle workplace environment where automotive activities are carried out.

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O:1.0 Identify non-complex communication system in a work environment	1.1	Identify the use of verbal means to pass on necessary information									
	1.2	Identify the use non-verbal means to convey necessary information e.g. body language, signs									
	1.3	Distinguish between symbols and signs appropriately									
L.O: 2.0 Utilise information in a work environment	2.1	Identify the source of information in the work environment									
	2.2	Identify how to communicate effectively with the source of information									
	2.3	Identify the different information flow systems in a work environment									
	2.4	Explain how to use information gathered to avoid challenges in a work situation									
	2.5	Report findings appropriately in accordance with laid down									

		procedure in the work environment Cards, Flip Chart									
L.O: 3.0 Use various communication methods in a work environment	3.1	Identify the various means of communication in the work environment									
	3.2	Pass information effectively to the right personnel									
	3.3	Identify the instructions in line with ethics of the work environment									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 3: TEAM WORK
Unit reference number: AUT/TRC/006/L1
level: 1
Credit value: 1
Guided learning hours: 10
Unit Purpose: The purpose of this unit is to impart to the learner, skills, knowledge and understanding required to develop team spirit and positive working relationship.
Unit assessment requirements/evidence requirements: Assessment must be carried out in real workplace environment in which automotive services and repair operations are carried out. Simulation is not allowed in this unit and level.

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Project
6. Work product

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
LO1: Utilize Positive working relationship with colleagues	1.1	Identify the need for developing positive relationship with colleagues.									
	1.2	Recognize the importance of relating with other people in a way that makes them feel valued and respected.									
	1.3	Assist team members when required.									
	1.4	Report to the appropriate personnel when requesting for assistance fall outside area of responsibility.									
	1.5	Communicate information to colleagues about own work that might affect others									
LO2: Recognise responsibilities within a team	2.1	Recognize own role and responsibilities within the team.									
	2.2	Perform individual tasks in line with the team rules and regulations.									
	2.3	Participate effectively in teamwork									
LO3: Comply with workshop policies	3.1	Work In line with workshop standard and structure.									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
	3.2	Use workshop code of practice									
	3.3	Explain workshop code of conduct.									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT: 4 Basics Tools in Tricycle Assembling and Repair Maintenance
Unit reference number: AUT/TRC/003/L2

QCF level: LEVEL 1

Credit value: 3 CREDITS
Guided learning hours: 30 HOURS

Unit Purpose: This unit is designed to equip learner with the knowledge and skills required to choose relevant tools for tricycle assembling and repair maintenance

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Work products
6. Project

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O:1. Explain the basic tools used in tricycle maintenance	1.1	List different Types of Tricycle Maintenance Tools • Cleaning and lubricant tools • Measuring tools • Miscellaneous tools • Adjustment tools									
	1.2	Identify types of cleaning and Lubricant tools: • Soft bristled brush, • Lubricant and Grease									
	1.3	Explain the types of Safety Inspection tools such as: Tire presser gauge, Brake pad inspection tools, and spoke tension meter									
	1.4	Describe the types of Miscellaneous tools such as: multitool, work light, and tricycle stand									
	1.5	Identify the types of Adjustment tools such as: Allen wrench set, socket set, gear adjustment tools, pliers and screw drivers									
	1.6	Explain the functions of tools stated above									
L.O: 2											

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
Explain the types of Tricycle Assembling Tools	2.1	Identify types of tools use in assembling tricycle tools such as: • Basic tools • Specials tools • Tricycle specific tools • Safety equipment									
	2.2	Identify the functions of tools listed above									
	2.3	Explain problems associated with the use of incorrect tricycle assembling tools									
L.O 3Describe the tools used in repairing tricycle	3.1	List the Types of Tricycle Maintenance Tools Such As: • Frame and fork repair tools • Wheel and tire repair tools • Brake repair tools • Gear and drive train Repair tools Electric and Accessory repair tools									
	3.2	Explain the functions of tools listed above									
	3.3	Identify problems associated with the use of incorrect tricycle assembling tools									
L.O 4 Describe the tools used in Tricycle Service and Maintenance	3.1	Identify service tools as specified by manufacturer's /workshop requirement.									
	3.2	Explain the use of service tools as specified by manufacturer's /workshop requirement.									
	3.3	Store tools as specified by manufacturer's /workshop requirement									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT: 5 Basics Materials used in Tricycle Assembling and Repair Maintenance

Unit reference number: AUT/TRC/004/L2

QCF level: LEVEL 1

Credit value: 3 CREDITS
Guided learning hours: 30 HOURS

Unit Purpose: This unit is designed to equip learner with the knowledge and skills required to recognise the appropriate materials for tricycle assembling and repair maintenance.

Assessment method will include:

1. Direct Observation (DO) (QA)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Work products
6. Project

LO (Learning outcome)		Criteria	Evidence Type					Evidence Ref Page number			
LO:1 Describe the materials used in Tricycle assembling and repair maintenance	1.1	Identify the types of workshop materials: • Cleaning materials • Fastner and hardware • Safety equipment									
	1.2	Explain the functions of workshop materials in 1.1									
	1.3	Identify the correct materials for assembling tricycle									
	1.4	Identify the correct Materials for repairing tricycle									
	1.5	Select appropriate tools for cutting operations									
L.O. 2 Utilise appropriate service materials in tricycle assembling and repair maintenance	2.1	Identify materials for servicing in accordance to the manufacturer's specification such as: engine oil, differential oil, filters, plug, grease, tyre, differential oil, filters, plug, grease, tyre									
	2.2	Use appropriate personal protective equipment for different operations									

LO (Learning outcome)	Criteria		Evidence Type					Evidence Ref Page number			
	2.3	Select materials for repairs such as: gaskets, sealants, seals Fittings, fasteners									
	2.4	Use manufacturers specifications									
L.O. 3: Maintain tricycle workshop Materials	3.1	Service materials as specified by manufacturer's /workshop requirement.									
	3.2	Use materials as specified by manufacturer's /workshop requirement.									
	3.3	Store materials as specified by manufacturer's /workshop requirement									
	3.4	Clean and store used Materials									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 6: Fastening and Joining Techniques in Tricycle Assembling and Repair Maintenance

Unit reference number: AUT/TRC/004/L1

QCF level: 1

Credit value: 3

Guided learning hours: 30 HOURS

Unit Purpose: This unit is about joining materials effectively using mechanical joining and fastening techniques

Unit assessment requirements/evidence requirements:
This assessment can only be carried in a real workplace environment in which automotive tricycle service, repair, and mechanical joining and fastening operations are carried out.

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Work products

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O:1. Employ safety precautions in Mechanical Fastening and joining operations.	1.1	Use the appropriate Personal Protective Equipment when carrying out mechanical joining operation.									
	1.2	Identify how to Protect the tricycle and its contents effectively when carrying out mechanical joining operation									
	1.3	Ensure that the tools, equipment and PPE you require are in a safe working condition									
	1.4	Dress and protect the repaired area to inhibit corrosion where applicable									
	1.5	Clean and store PPE and equipment in appropriate manner									
	1.6	Confirm to health safety and legal requirements									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O: 2.0 Utilise mechanical joining operations tools and equipment in tricycle assembling and repair maintenance.	2.1	Use the correct tools and equipment for carrying out mechanical joining operations									
	2.2	Identify the tools, equipment and PPEs require in a safe working condition									
	2.3	Explain how to check stability of tooling									
L.O: 3.0 Employ joining/ fastening operations in tricycle assembling and repair maintenance.	3.1	Prepare material and align to enable suitable joint to be achieved									
	3.2	Polish meeting flanges before joining									
	3.3	Set up your equipment to carry out mechanical joining operations such as: • Check suitability of joining technique • Check suitability of tooling Check if consumables are correct									
	3.4	Check integrity of the joint.									
	3.5	Use mechanical joining operations within the agreed timescale									
	3.6	Identify common fastener failures									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT: 7 Engine System Maintenance in Tricycle Assembling and Repair Maintenance
Unit reference number: AUT/TRC/007/L1

QCF level: LEVEL 1

Credit value: 4

Guided learning hours: 40 HOURS

Unit Purpose: This unit is to equip learner with the knowledge and skills required in identifying faults, and carryout service repair on tricycle.

Unit assessment requirements/evidence requirements:
This assessment can only be carried in a real workplace environment in which automotive tricycle service and repair operation are carried out in a workshop environment effectively. Live engines and functional tricycle shall be provided.

Assessment method will include:
1.Direct Observation (DO)
2.Question and Answer (QA)
3.Witness Testimony (WT)
4.Personal statement (PS)
5.Project
6.Work product

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O. 1 Explain Tricycle Engine Configuration	1.1	Identify types of tricycle engine									
	1.2	Identify components of a tricycle engine									
	1.3	State the function of each component of a tricycle engine									
	1.4	Describe the operations of a tricycle engine									
L.O. 2 Explain Tricycle engine routine servicing	2.1	Identify the tricycle engine system and components following the manufacturer's approved methods.									
	2.2	Recognise correct tools for servicing a tricycle engine									
	2.3	Identify genuine filter, plug and lubricants in line with manufacturer's specification									
	2.4	Describe service procedures in the following:									

		• Spark plugs • Fuel filter • Air filter • Oil filter									
	2.5	Replace engine lubricant									
L.O3 Practice servicing Tricycle carburettor	3.1	Carryout faults identification during tricycle carburettor servicing.									
	3.2	Use manufacturer's service information									
	3.3	Identify tools/equipment for tricycle carburettor servicing									
	3.4	Dismantle the carburettor to clean jets/ nut of blockage									
	3.5	Recognise of worn or damage parts.									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

NATIONAL SKILLS QUALIFICATION

IN

AUTOMOTIVE SECTOR

TRICYCLE ASSEMBLING, REPAIRS AND MAINTENANCE

LEVEL 2

FEBRUARY, 2025

SUMMARY OF LEVEL 2 (AS CLASSIFIED)

MANDATORY UNITS					
S/NO UNIT	REFERENCE NO.	NSQ TITLE	CREDIT VALUE	TOTAL LEARNING HOUR	REMARKS
1	AUT/TRC/001/L2	Health, Safety and Environment	2	20	Mandatory
2	AUT/TRC/002/L2	Communication in Auto Tricycle	2	20	Mandatory
3	AUT/TRC/003/L2	Teamwork	1	10	Mandatory
4	AUT/TRC/004/L2	Engine System Maintenance	3	30	Mandatory
6	AUT/TRC/005/L2	Wheels, tyres, steering & Suspension	6	60	Mandatory
7	AUT/TRC/006/L2	Electrical works and enhancement	6	60	Mandatory
8	AUT/TRC/007/L2	Tricycle Assembling	6	60	Mandatory
	Total		26	260	

Purpose of the Qualification: This Qualification covers the competence and knowledge learners need to carry out maintenance, service and general repairs of auto tricycles. It includes identification of faults and replacement of mechanical and electrical components safely. The qualification also ensures that the learner is aware of health & safety, the environments, and appropriate communication. The candidate will use tools and equipment for the purpose of maintenance. It enables a candidate to dismantle 'live' components, for example engine, gearbox and back axle.

Unit: 1 HEALTH, SAFETY AND ENVIRONMENT (HSE) IN TRICYCLE ASSEMBLING AND REPAIR MAINTENANCE

Unit reference number: AUT/TRC/001/L2

QCF level: 2

Credit value: 2

Guided learning hours: 20

Unit Purpose: This unit is about the application of knowledge and skills to competently carryout daily activities in an automotive tricycle workshop while observing relevant safety procedures and regulations.

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real automotive tricycle workplace environment where automotive activities are carried out. Simulation is not allowed in this unit and level.

Assessment method will include:
1. Direct Observation (DO) (QA)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Project
6. Work product

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
L.O:1 Apply Workshop safety practices in a workplace	1.1	Implement safe work practice and instructions.									
	1.2	Apply safety signs and symbols.									
	1.3	Use signs and symbols correctly									
	1.4	Carry out safe work practices and instructions									
	1.5	Carry out work in accordance with health and safety practices.									
L.O 2: Explain Workshop hazards and risks	2.1	Use work environment hazards									
	2.2	Describe the types of hazard and risks in surface area									
	2.3	Explain risks in height and depth									
	2.4	Apply regulations as it relates to hazards and risk in work environment.									
L.O.3:	3.1	Explain the types of PPEs									

L.O (Learning outcome)	Criteria:-		Evidence Type						Evidence Ref Page number			
Use Personal Protective Equipment (PPE) as appropriate	3.2	Use PPEs in accordance with instructions.										
	3.3	Select appropriate PPEs.										
	3.4	Service PPEs after use.										
L.O. 4: Manage workshop accidents	4.1	Describe first aid facility										
	4.2	Use basic dressing materials										
	4.3	Carry out measure during accident with supervisor given instructions.										
L.O. 5: Apply Safe work habits in the workshop environment	5.1	Use safe access and exit routes in the work environment										
	5.2	Test appropriate working tools, materials and equipment										
	5.3	Use tools and equipment safely in accordance with the supervisors instructions										
	5.4	Assemble all tools, equipment and unused materials for appropriate storage										
	5.5	Carry out general housekeeping of work environment										
L.O: 6. Practice lifting, stacking, and loading/offloading in the Workshop	6.1	Use lifting and stacking techniques										
	6.2	Carry out appropriately lifting techniques in loading and offloading of materials without assistance										
	6.3	Perform correct lifting and loading techniques with mechanical assistance										
	6.4	Assemble materials correctly										
L.O: 7 Handle flammable and inflammable substances.	7.1	Recognise the effect of gas, liquid and solid materials on self and work environment										
	7.2	Use various types of protection against gaseous, liquid, and solid materials on self and work environment										
	7.3	Use appropriate legislative standards with regards to safety										

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT 2: COMMUNICATION IN TRICYCLE ASSEMBLING AND REPAIR MAINTENANCE

Unit reference number: AUT/TRC/002/L2

QCF level: 2

Credit value: 2

Guided learning hours: 20

Unit Purpose: To establish an effective communication system that is responsive to change in meeting workers and client's needs in work environment

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real automotive tricycle workplace environment where automotive activities are carried out.

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
L.O:1 Use non-complex communication system in a work environment	1.1	Use a verbal means to pass on necessary information									
	1.2	Use non-verbal means to convey necessary information e.g. body language, signs									
	1.3	Recognise symbols and signs appropriately									
L.O: 2 RElate information in a work environment effectively.	2.1	Recognise the source of information in the work environment									
	2.2	Communicate effectively with the source of information									
	2.3	Use the different information flow systems in a work environment									
	2.4	Use information gathered to avoid challenges in a work situation									
	2.5	Report findings appropriately in accordance with laid down procedure in the work environment Cards, Flip Chart									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O: 3.0 Utilise different Communication methods in a work environment	3.1	Use the various means of communication in the work environment									
	3.2	Communicate information effectively to the right personnel									
	3.3	Carry out instructions in line with ethics of the work environment									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 3: TEAM WORK
Unit reference number: AUT/TRC/003/L2
level: 2
Credit value: 1
Guided learning hours: 10
Unit Purpose: The purpose of this unit is to impart to the learner, skills, knowledge and understanding required to develop team spirit and positive working relationship.
Unit assessment requirements/evidence requirements: Assessment must be carried out in real workplace environment in which automotive services and repair operations are carried out. Simulation is not allowed in this unit and level.

Assessment methods will include:
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Project
6. Work product

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
LO1: Utilize relationship with colleagues in a work place	1.1	Identify the need for developing positive relationship with colleagues.									
	1.2	Recognize the importance of relating with other people in a way that makes them feel valued and respected.									
	1.3	Assist team members when required.									
	1.4	Report to the appropriate personnel when requesting for assistance fall outside area of responsibility.									
	1.5	Communicate information to colleagues about own work that might affect others									
LO2: Utilise team work in a work place	2.1	Recognize own role and responsibilities within the team.									
	2.2	Perform individual tasks in line with the team rules and regulations.									

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
	2.3	Participate effectively in teamwork									
LO3: Complied with workshop policies	3.1	Work In line with workshop standard and structure.									
	3.2	Use workshop code of practice									
	3.3	Explain workshop code of conduct.									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT: 4 ENGINE SYSTEM MAINTENANCE.

Unit reference number: AUT/TRC/004/L2

QCF level: LEVEL 2

Credit value: 5

Guided learning hours: 50 HOURS

Unit Purpose: This unit is to equip learner with knowledge and skills required in fault identification, and repairs in tricycle engine maintenance.

Unit assessment requirements/evidence requirements:
This assessment can only be carried in a real workplace environment in which automotive tricycle service and repair operation are carried out in a workshop environment effectively. Live engines and functional tricycle shall be provided.

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Project
6. Work product

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence page number			
L0 1. Practice periodic maintenance on tricycle engine	1.1	Explain periodic maintenance									
	1.2	Identify the tricycle engine system									
	1.3	Identify the various types of components in tricycle engine									
	1.4	Carry out the periodic maintenance									
L.O2. Utilise procedures for Servicing tricycle engine	2.1	Identify the faults by visual inspection, direct observation and sound.									
	2.2	Use manufacturer's service information									
	2.3	Identify tools/equipment for tricycle servicing									
	2.4	Dismantle the engine to clean jets/ nut of blockage									
	2.5	Recognise of worn or damage parts.									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence page number			
L.O. 3. Service tricycle engine	3.1	Examine the components following the manufacturer's approved methods.									
	3.2	Recognise correct tools for servicing a tricycle engine									
	3.3	Identify genuine filter, plug and lubricants in line with manufacturer's specification									
	3.4	Describe tricycle servicing activities such as: • Spark plugs cleaning • Fuel filter cleaning • Air filter cleaning Oil filter cleaning									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT: 5 STEERING, SUSPENSION, TYRES & WHEEL IN TRICYCLE ASSEMBLING AND REPAIR MAINTENANCE

Unit reference number: AUT/TRC/005/L2

QCF level: 2

Credit value: 6

Guided learning hours: 60

Unit Purpose: This unit is to equip learner with the requisite knowledge and skills on how to assemble, repair and service steering, suspension, tyres and wheels of tricycle.

Unit assessment requirements/evidence requirements;

This assessment can only be carried out in a real automotive tri-cycle workshop environment in which replacement and repair procedures for wheels, tyres, steering & suspensions are carried out. Assessment methods will include

1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Project
6. Work product

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number				
L.O:1 Perform Steering servicing , maintenance and repair.	1.1	Identify faults relating to steering										
	1.2	Select correct tools										
	1.3	Dismantle the steering units										
	1.4	Service the steering bearings										
	1.5	Service the steering bushings										
	1.6	Replace damaged parts such as: steering bushings steering bearing (top and bottom) centre bearing						wi				
	1.7	Couple the unit back										
	1.8	Test run										
L.O: 2. Service and repair Tricycle suspension system.	2.1	Identify faults in shock absorber										
	2.2	Identify faults in linkages										
	2.3	Identify faults in suspension bushings										
	2.4	Select correct working tools										
	2.5	Dismantle suspension unit										

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
	2.6	Replace damaged parts such as: shock absorber (Oil seal and spring) linkages suspension bushings									
	2.7	Couple back the unit									
	2.8	Test run									
L.O.3: Carry out Tricycle tyre repair and maintenance.	3.1	Identify types of tyre and tubes used in Tri-cycles									
	3.2	Use correct tools and techniques									
	3.3	Remove tire from the wheel									
	3.4	Check for leakages									
	3.5	Repair tube and tyre									
	3.6	Inflate tyre according to the manufacturer's specification									
L.O.4 Carry out Tricycle wheel alignment and balancing.	4.1	Check wheel alignment and balancing.									
	4.2	Identify causes of miss-alignment									
	4.3	Remove wheel from hub with correct tools.									
	4.4	Check the bearing and bushing									
	4.5	Replace the damaged bearing and bushing									
	4.6	Assemble the wheel									
	4.7	Test run									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT: 6 ELECTRICAL WORK & ENHANCEMENT

Unit reference number: AUT/TRC/006/L2

QCF level: 2

Credit value: 6

Guided learning hours: 60

Unit Purpose: This unit is to equip learner with the requisite knowledge and skills on how to remove and refit basic electrical components on tricycles

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real tricycle workplace environment in which the removal and fitting of basic mechanical, electrical components are carried out.

Assessment methods will include
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Work product

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
L.O: 1 Conduct Tricycle wiring repair system	1.1	Describe manufacturer's wiring system									
	1.2	Identify wires by colours									
	1.3	Select correct working tools									
	1.4	Trace faults									
	1.5	Rectify faults									
	1.6	Replace damaged parts according to standards									
	1.7	Test for functionality									
L.O: 2. Carry out repair of Battery	2.1	Identify the features of a battery									
	2.2	Select correct tools/instruments									
	2.3	Identify areas of fault such as: • Rust of battery terminals • Level of acid, Voltage level									
	2.4	Rectify the faults									
	2.5	Replace the battery									
	2.6	Test for functionality									

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
L.O.3: Repair indicators and switches of tricycle.	3.1	Identify switches/indicators in tri-cycle									
	3.2	Test the switches for functionality									
	3.3	Check the indicators for functionality with correct tools/equipment									
	3.4	Identify faults in switches with correct instrument									
	3.5	Identify faults in indicators with correct instrument									
	3.6	Replace damaged parts such as: Bulbs, switches, indicators, fuses Wires									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit: 7 TRICYCLE ASSEMBLING

Reference number: AUT/TRC/007/L2

QCF level: LEVEL 2

Credit value: 6

Guided learning hours: 60 HOURS

Unit Purpose: This unit is to equip learner with the requisite knowledge and skills on how to assemble and test-run tricycles

Unit assessment requirements/evidence requirements:
This assessment can only be carried in an environment in which automotive tricycle assembly are carried out in a commercial environment effectively.

Assessment methods will include:

1. Direct Observation (DO)
2. Question and Answer / oral questions (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Project
6. Work product

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
L.O. 1 Identify the basic procedure of assembling Tricycle	1.1	Identify types of tricycle Cab Pickup Power solar									
	1.2	Identify brand of tricycle Bajaj TVS Piaggio Mahindra Atul									
	1.3	Sort out the different parts according to the system									
	1.4	Examine the tricycle system and components following the manufacturer's approved methods									
L.O 2:	2.1	Select correct tools/equipment for assembly of a tricycle									

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
Employ procedure in carrying out Tricycle Assembling	2.2	Identify genuine tricycle parts in line with manufacturer's specification.									
	2.3	Apply correct tools in line with manufacturer's specification.									
	2.4	Carry out tricycle assembly activities such as: Electrical wiring, Tyres, wheels, Roof top & carrier, Upholsteries									
	2.5	Carry-out test- running to check the functionality of: Engine system Braking system Electrical system Suspension									
LO 3.											

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

NATIONAL SKILLS QUALIFICATION

IN

AUTOMOTIVE SECTOR

TRICYCLE ASSEMBLING, REPAIRS AND MAINTENANCE

LEVEL 3

FEBRUARY, 2025

SUMMARY OF LEVEL 3 (AS CLASSIFIED)

MANDATORY AND OPTIONAL UNITS

S/NO UNIT	REFERENCE NO.	NSQ TITLE	CREDIT VALUE	TOTAL LEARNING HOUR	REMARKS
1	AUT/TRC/001/L3	Health, Safety and Environment	2	20	Mandatory
2	AUT/TRC/002/L3	Communication in Auto Tricycle	2	20	Mandatory
3	AUT/TRC/003/L3	Customer Relations in an Automotive Service & Repair Tricycle Workshop	3	30	Mandatory
3	AUT/TRC/004/L3	Principle of tricycle drive chain	6	60	Mandatory
4	AUT/TRC/005/L3	Engine overhauling	6	60	Mandatory
7	AUT/TRC/006/L3	Solar power Tricycle	6	60	Optional
6	AUT/TRC/007/L3	Tricycle Braking System Repair and maintenance	5	50	Mandatory
7	AUT/TRC/008/L3	Tricycle Body work	6	60	Optional
TOTAL CREDIT VALUE/HOURS			36	360	

NOTE: Learners are required to select 1 unit from the optional units

Purpose of the Qualification: This Qualification covers the competence and knowledge learners need to carry out maintenance, service and general repairs of auto tricycles. It includes identification of faults and replacement of mechanical, solar power components, and engine overhauling safely. The qualification also ensures that the learner is aware of health & safety, the environments, and appropriate communication. The candidate will use tools and equipment for the purpose of maintenance. It enables a candidate to dismantle 'live' components, for example engine, gearbox and back axle.

Unit: 1 HEALTH, SAFETY AND ENVIRONMENT (HSE) IN TRICYCLE ASSEMBLING AND REPAIR MAINTENANCE WORKPLACE

Unit reference number: AUT/TRC/001/L3

QCF level: 3

Credit value: 2

Guided leaning hours: 20

Unit Purpose: This unit is to equip learner with the required knowledge and skills required to work safely an automotive tricycle assembly and maintenance workshop.

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real automotive tricycle workplace environment where automotive activities are carried out. Simulation is not allowed in this unit and level.

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer/ oral questions (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Project
6. Work product
7. Project

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
LO 1. Practice Personal Health and Hygiene	1.1	Wear clean, smart and appropriate Personal Protective Equipment (wears)									
	1.2	Work safely at all times, complying with health, safety and environmental regulations and guidelines									
	1.3	Get cuts, grazes and wounds treated by the appropriate personnel.									
	1.4	Report any form of illness promptly to the appropriate personnel.									
LO 2: Explain how to maintain Personal Health	2.1	State own responsibility in the health and safety Act as it relates to own occupation									

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
and Hygiene											
	2.2	State general rules on hygiene that must be followed									
	2.3	State the Personal Protection Equipment (PPE) (such as Head Protection, Foot Protection, Hand and body protection) and regulatory protection.									
	2.4	State the importance of maintaining good personal hygiene									
	2.5	Describe how to deal with cuts, grazes and wounds and why it is important to do s									
LO 3. Assist in the maintenance of a hygienic, safe and secure workplace	3.1	State the importance of working in a healthy, safe and hygienic workplace									
	3.2	Report any accidents or near misses quickly and accurately to the proper personnel									
	3.3	Follow health, hygiene and safety procedure at work									
	3.4	Practice emergency procedures during work									
	3.5	Follow organizational security procedures and measures									
	3.6	Ensure the disposal of waste and pollution control with organic and inorganic waste									
	3.7	Follow noise control and protection methods.									
L.O 4. Explain the Prevention of hazards in the work place	4.1	Identify any potential hazards and deal with these correctly									
	4.2	Explain where information about health, safety and environment in the workplace can be obtained. l									
	4.3	Describe the types of hazards in the workplace that may occur and how to deal with them									
	4.4	Explain hazards that can be dealt with personally and those that should be reported to the appropriate personnel									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
	4.5	Explain how to warn other people about potential hazards and why this is important									
	4.6	Explain why accidents and near accidents should be reported and to whom									
	4.7	Describe the types of emergencies that may happen in the workplace and how to deal with it									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT 2: COMMUNICATION IN AUTO TRICYCLE WORKSHOP

Unit reference number: AUT/TRC/002/L3

QCF level: 3

Credit value: 2

Guided learning hours: 20

Unit Purpose: To establish an effective communication system that is responsive to change in meeting workers and client's needs, in work environment

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real automotive tricycle workplace environment where automotive activities are carried out.

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer(QA)
3. Witness Testimony (WT)
4. Personal statement (PS)

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
LO1: Apply Non-complex communication system in a work environment	1.1	Use a simple verbal means to pass on necessary information.									
	1.2	Use non-verbal means to pass on necessary information e.g. body language.									
	1.3	Identify and explain symbols and signs appropriately									
	2.1	Identify the source of information in workshop and work environment.									
LO2: Utilise Information source in a work environment.	2.2	Relate appropriately with the source of information.									
	2.3	Use the various information flow systems in a work environment.									
	2.4	Use information sources to address challenges in a work environment.									
	2.5	Communicate findings in accordance to procedure in a work environment									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
LO: O3 Apply communication methods in a work environment	3.1	Identify the various methods of communication in the work environment.									
	3.2	Use effectively, the various methods of communication in a work environment and communicate effectively to the right personnel.									
	3.3	Observe information effectively using symbols, signs and codes.									
	3.4	Observe instructions in line with ethics of the work environment.									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 3: CUSTOMER RELATIONS IN TRICYCLE ASSEMBLING, REPAIRS AND MAINTENANCE WORKPLACE
Unit reference number: AUT/TRC/032/L3
QCF level: 3
Credit value: 3
Guided learning hours: 30 HOURS
Unit Purpose: This unit is about gaining information from customers on their perceived needs, ascertain the scope of work, giving advice and information and agreeing a course of action, contracting for the agreed work and completing all necessary records and instructions.
Unit assessment requirements: This assessment can only be carried out in a real automotive workplace environment.
Assessment method will include:

1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Work product
6. Project.

L.O (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number			
L.O. Explain customers communication	1.1	Explain the term Customer Relation									
	1.2	Explain the term Communication									
	1.3	Discuss types and methods of Communication.									
	1.4	Gather relevant information from the customer to make an assessment of perceived tricycle needs.									
	1.5	Analyze and clarify customers complaints during conversation.									
	1.6	Document customer's understanding of the requirements you have made.									
L.O. 2: Use Customers' complaint documentation in tricycle assembly and maintenance workshop.	2.1	Carryout accurate identification and clarification of customer needs.									
	2.2	Discuss the following with the customer before accepting the tricycle; • Physical inventory of tricycle									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
		• Extent and nature of the work to be undertaken • Terms and conditions of acceptance • Cost • Timeframe.									
	2.3	Provide customers with accurate, current and relevant information on: • Suitable tricycle inspection, repair/parts replacement • Potential causes of action • The consequences of the action • The estimated cost									
L.O.3 Utilise Customer Follow Up Procedures	4.1	Compile further customer approval where the contracted agreement is likely to be exceeded.									
	4.2	Describe how to get feedback from customers.									
	4.3	Carryout customer satisfaction survey.									
	4.4	Obtain customer feedback on completed jobs.									
	4.5	Analyze customer feedback									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit: 4 PRINCIPLE OF TRICYCLE DRIVE TRAIN

Unit reference number: AUT/TRC/004/L3

QCF level: 3

Credit value: 6

Guided learning hours: 60

Unit Purpose: This unit is to equip learner with the requisite knowledge and skills required to identify and rectify faults within tricycle drive train.

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real automotive tricycle workplace environment.

Assessment method will include:
1. Direct Observation (DO)
2. Oral questions (QA)
3. Question and Answer
4. Witness Testimony (WT)
5. Personal statement (PS)
6. Work product
7. Project

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O:1 Conduct Gear Box repairs	1.1	Identify the features of the tricycle gear box									
	1.2	Carry-out service on gear engagement system with correct tools (gear cable and accessories) lubricate cable-jacket and the lever-gear a. Identify faults in gear box b. Select correct tools/equipment c. Dismantle the gear box d. Place damaged parts • cross-gear gear selector									
	1.3	Assemble lay-shaft gear teeth									
	1.4	Assemble the gearbox									
L.O: 2.	2.1	Identify the features of rear axle									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
Perform Rear axle repair maintenance	2.2	Identify faults in rear axle									
	2.3	Replace broken shaft seals									
	2.4	Lubricate the gear and bearings									
	2.5	Carry out fault repair in rear axle: • rotating muff cup • driving shaft bushings • cup rubber									
	2.6	Couple back the unit									
	2.7	Test to ensure replaced component works optimally.									
L.O. 3 Effectively conduct Tricycle drive shaft assembly repair and maintenance.	3.1	Identify faults in the final drive unit									
	3.2	Dismantle the unit									
	3.3	Replace damaged parts such as: Driving shaft, Wheel bearings, and Universal joints.									
	3.4	Couple back the unit									
	3.5	Test to ensure replaced component works optimally.									
L.O. 4 Conduct Tricycle clutch unit repair maintenance.	4.1	Identify faults in clutch unit									
	4.2	Dismantle to repair clutch unit									
	4.3	Replace damaged parts: • clutch plate, • clutch drive • clutch bearing and • bushings • clutch housing, • dumper rubber									
	4.4	Grind clutch housing									
	4.5	Couple clutch unit									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT: 5 Tricycle Engine overhauling

Reference number: AUT/TRC/005/L3

QCF level: LEVEL 3

Credit value: 6

Guided learning hours: 60 HOURS

Unit Purpose: This unit is to equip learner with the requisite knowledge and skills required to overhaul tricycle engine.

Unit assessment requirements/evidence requirements:
This assessment can only be carried in an environment in which automotive tricycle assembly are carried out in a commercial environment effectively.

Assessment method will include:

1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Project
6. Work product

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number				
L.O. 1 Conduct Tricycle engine overhauling procedures	1.1	Identify engine fault										
	1.2	Select correct tools use in overhauling										
	1.3	Drain engine oil and Disconnect battery.										
	1.4	Remove engine from the tricycle frame.										
L.O. 2 Carry out Tricycle engine dismantling	2.1	Remove external components: exhaust manifold										
	2.2	starter motor removal										
	2.3	Cylinder head removal										
	2.4	Piston and crankshaft removal										
	2.5	Inspect all components										
L.O3	3.1	Demonstrate cleaning of removed component parts										

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
Conduct Tricycle component parts cleaning and inspection	3.2	Inspect cylinder head for wears and cracks									
	3.3	Check valve seat and guide for wears and cracks.									
	3.4	Inspect pistons and rings for wears									
	3.5	Inspect crankshaft and connecting rods:									
	3.6	Lubricate all component parts inspected accordingly.									
L.O.4 Assemble Tricycle engine	4.1	Install pistons and crankshaft									
	4.2	Install cylinder head									
	4.3	Reassemble external components									
	4.4	Reinstall engine in the tricycle frame									
	4.5	Check to ensure coolant and lubricant are applied to component parts as required.									
	4.6	Test assembled engine in line with manufacturer's procedures.									

Important Notes:

Cleanliness is crucial: Keep your workspace and all engine components clean to prevent contamination.

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT: 6 Solar power Tricycle

Unit reference number: AUT/TRC/006/L3

QCF level: 3

Credit value: 6

Guided learning hours: 60

Unit Purpose: This unit is to equip learner with the requisite knowledge and skills required to carryout repair and maintenance of solar powered tricycle.

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real automotive tricycle workplace environment where automotive activities are carried out. Simulation is not allowed in this unit and level.

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O:1. Assemble Solar power in tricycle	1.1	Identify solar power tricycle									
	1.2	Identify component parts of solar powered tricycle.									
	1.3	Carry out solar components installation									
	1.4	Use correct tools and equipment to assemble solar tricycle									
L.O: 2. Apply safe work practice in solar power tricycle	2.1	Use safe work practice and instruction									
	2.2	Select correct tools and equipment									
	2.3	Use manufacturer's specification to install the panel									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
	2.4	Carry out installation procedure according to specification									
	2.5	Test all the components ensure they are compatible to the system required									
	2.6	Examine the tricycle frame system for any damage or corrosion									
	2.7	Maintain the battery charge to the recommended level									
L.O.3 Carry out Electrical works in assembling solar power tricycles	3.1	Carryout panel installation									
	3.2	Carryout electrical motor installation									
	3.3	Install controller properly									
	3.4	Test the battery power and install appropriately									
	3.5	Carryout test running on solar power tricycle									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT: 7 TRICYCLE BRAKE SYSTEM REPAIR AND MAINTENANCE

Unit reference number: AUT/TRC/007/L3

QCF level: 3

Credit value: 5

Guided learning hours: 50

Unit Purpose: This unit is to equip learner with the requisite knowledge and skills required to carryout tricycle break repairs.

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real automotive tricycle workplace environment where automotive activities are carried out. Simulation is not allowed in this unit and level.

Assessment method will include:
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Project
6. Work product

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O:1. Perform Tricycle brake system servicing according to procedures.	1.1	Identify faults in braking system									
	1.2	Service the wheel brake pots with the correct tools									
	1.3	Service wheel pot pistons/ pot rubber									
	1.4	Test run the serviced tricycle									
L.O: 2 Conduct Tricycle brake system repair according to procedures.	2.1	Identify faults for repair									
	2.2	Select correct tools/equipment									
	2.3	Dismantle braking system.									
	2.4	Replace damaged parts such as: • brake master cylinder kits • fluid container • broken hydraulic pipe • brake wheel pot • brake wheel kits									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
		• hydraulic hose									
L.O: 3 Assemble Tricycle Brake system components according to procedures.	3.1	Couple braking the system									
	3.2	Brake bleeding system									
	3.3	Test run the tricycle									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit: 8 TRICYCLE BODY WORKS

Unit reference number: AUT/TRC/08/L3

QCF level: 3

Credit value: 6

Guided learning hours: 60

Unit Purpose: This unit is to equip learner with the requisite knowledge and skills required to carryout repairs on the physical body structure of tricycle.

Unit assessment requirements/evidence requirements
This assessment can only be carried out in a real automotive tricycle workplace environment where automotive activities are carried out. Simulation is not allowed in this unit and level.

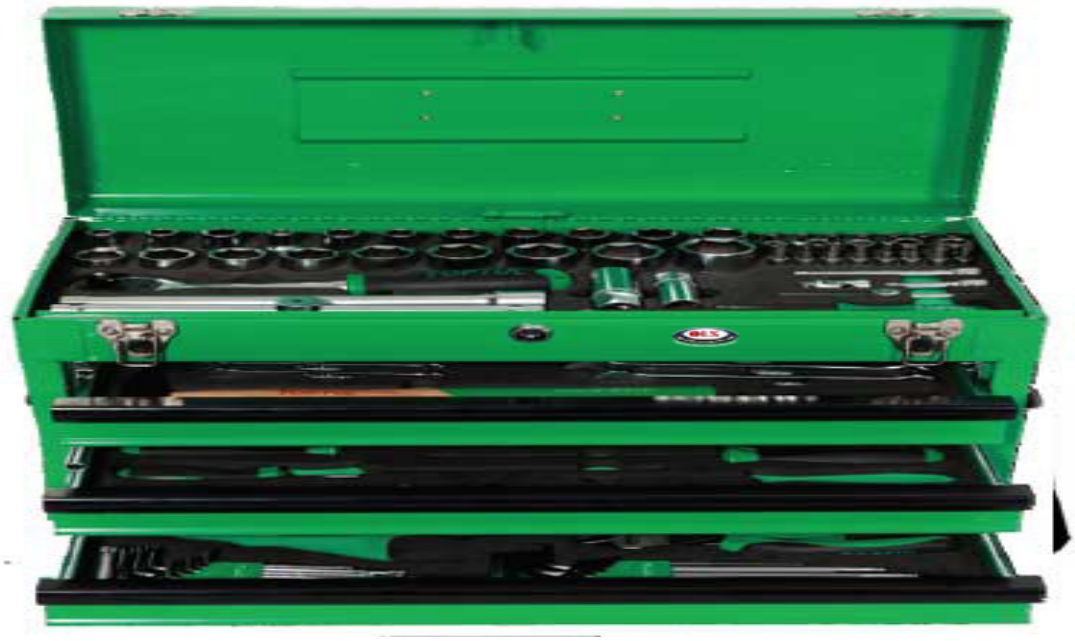
Assessment method will include
1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)
5. Work product (WP)

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O: 1 Perform basic panel beating work	1.1	Carry-out visual inspection of the body of a Tricycle									
	1.2	Identify areas that requires panel beating in the body									
	1.3	Carry-out marking-out									
	1.4	Cut suitable metal in line with manufacturer's specification									
	1.5	Prepare joining surfaces									
L.O2 Conduct basic welding operations	2.1	Identify types of welding machines for Tricycle body welding									
	2.2	Select correct welding tools/equipment									
	2.3	Carry-out welding operations									
	2.4	Check the welded joints for defects									
	2.5	Grind welded surface									
L.O.3:	3.1	Identify areas requiring body filler									
	3.2	Apply correct mix of body filler									

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
Conduct Spraying/painting operations.	3.3	Carry-out polishing operations									
	3.4	Apply priming chemicals									
	3.5	Carry-out spraying operations									
L.O. 4 Perform simple Upholstery work in motorcycle	4.1	Remove auxiliary components with correct tools such as: Carpet, seat cover, sun/rain shield (roop-top-cover)									
	4.2	Select auxiliary component									
	4.3	Replace auxiliary component									

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Tools and equipment use in servicing and maintenance of tricycle



(c) General equipment tools

National Skills Qualifications

FOR

TRICYCLE ASSEMBLING REPAIRS AND MAINTENANCE

LEVEL 1, 2 & 3

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