AUTOMOTIVE SECTOR
Tricycle Maintenance and Repairs
SUMMARY OF LEVEL 1 (AS CLASSIFIED)

MANDATORY AND OPTIONAL UNITS

S/NO/ UNIT	REFERENCE NO.	NOS 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 in Auto Tricycle**	2	20	**Mandatory**
3	**AUT/TRC/003/L1**	**Application of Mechanical Fastening Techniques**	3	30	**Mandatory**
4	**AUT/TRC/004/L1**	**Tools and Materials**	3	30	**Mandatory**
5	**AUT/TRC/005/L1**	**Engine System Maintenance**	4	40	**Optional**
6	**AUT/TRC/007/L1**	**Wheels, tyres, steering & Suspension**	3	30	**Optional**
TOTAL CREDIT VALUE/HOURS			**17**	**170**	

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

Qualification Purpose: This Qualification covers the skills and knowledge needed to safely carry out servicing and general repairs of auto tricycles' mechanical, electrical systems and components. The qualification also ensures that the candidate is aware of health and safety, the environment, appropriate communication, the use of tools and their maintenance. It does not enable a candidate to dismantle 'live' components, for example engine, gearbox and back axle.

Unit: 001 HEALTH, SAFETY AND ENVIRONMENT (HSE) IN AUTOMOTIVE TRICYCLE WORKSHOP

Unit reference number: AUT/TRC/001/L1

QCF level: 1

Credit value: 2

Guided learning hours: 20

Unit Purpose: This unit is about the knowledge and skills needed to competently carryout daily activities in an automotive tricycle shop while observing relevant work ethics and safety. It includes basic first-aid and fire fighting procedures**.**

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 / oral questions (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 Demonstrate safe work practices and instructions	1.1	Explain safe work practice and instructions									
	1.2	Identify safety signs and symbols									
	1.3	Use signs and symbols correctly									
	1.4	Carry out safe work practices and instructions									
	1.5	Work in accordance with health and safety practices.									
L.O 2: Demonstrate understanding of safety hazards and risks											
	2.1	Identify work environment hazards									
	2.2	State types of hazard and risks in surface area									
	2.3	State types of hazards and risks									

		in height and depth									
L.O.3: Demonstrate the usage of personal protective equipment (PPE)											
	3.1	Identify the types of PPEs									
	3.2	Use PPEs in accordance with instructions									
	3.3	Select appropriate PPEs									
	3.4	Service PPEs after use									
L.O. 4: Demonstrate the ability to take appropriate actions during accident/injury	4.1	Identify first aid facility									
	4.2	Use basic dressing materials									
	4.3	Comply to supervisor given instructions									
	4.4	Communicate accident/injury to the appropriate supervisor									
L.O. 5: Carry out safe work habit and clean work environment	5.1	Use safe access and exit routes in the work environment									
	5.2	Identify appropriate working tools, materials and equipment									
	5.3	Use tools and equipment safely in accordance with the supervisors instructions									
	5.4	Gather all tools, equipment and un used materials for appropriate storage									
	5.5	Carry out general housekeeping of work environment									
	5.6	Dispose all wastes appropriately to designated waste facilities									
L.O: 6. Lift, load, offload and stack of materials safely	6.1	Identify 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	Stack materials correctly									
L.O: 7 Demonstrate the understanding of 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 002: COMMUNICATION PROCESS IN AN AUTOMOTIVE ENVIRONMENT

Unit reference number: AUT/TRC/002/L1

QCF level: 1

Credit value: 2

Guided learning hours: 20

Unit Purpose: To establish effective and quality communication system that is responsive and subject to change in meeting workers and employers need, 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 / oral questions (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 use a 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	Distinguish symbols and signs appropriately									
L.O: 2.0 Demonstrate the ability to source information in a work environment											
	2.1	Identify 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: 3.0 Use various communication means in a work environment											
	3.1	Identify the various communication equipment in the work environment									
	3.2	Use effectively the various communication equipment in a work environment									
	3.3	Pass information effectively to the right personnel									
	3.4	Carry out instructions in line with ethics of the work environment									

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EQA Signature (if sampled)	**Date:**

Unit: 003
FASTENING (JOINING) TECHNIQUES USED IN AUTO TRICYCLE

Unit reference number: AUT/AM/003/L1

QCF level: **1**

Credit value: **3**

Guided learning hours: **30 HOURS**

Unit Purpose: This unit is about joining materials effectively using mechanical joining by 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 by fastening operations are carried out.

Assessment method will include:

1. Direct Observation (DO)
2. Question and Answer /oral questions (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:1.0 Apply safety measures in metal joining/fastening	1.1	Use the appropriate personal protective equipment when carrying out mechanical joining operations.									
	1.2	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	Carry out mechanical joining operations following									
	1.7	Conform to health safety and legal									

		requirements									
L.O: 3.0 Use tools and equipment for carrying out mechanical joining operations											
	3.1	Select the correct tools and equipment for carrying out mechanical joining operations									
	3.2	Ensure that the tools and equipment and PPE you require are in a safe working condition									
	3.3	Use tools and equipment to carry out mechanical joining and fastening									
	3.4	Check stability of tooling									
L.O: 5 Apply various types of metal joining / fastening techniques.	4.1	Prepare material and align to enable suitable joint to be achieved									
	4.2	Polish meeting flanges before joining									
	4.3	Set up equipment to carry out mechanical joining operations such as: checking suitability of joining technique checking suitability of tooling check consumables are correct									
	5.1	Check integrity of the joint.									
	5.2	Carry out mechanical joining operations within the agreed timescale									
	5.3	Identify common fastener failures									

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EQA Signature (if sampled)	**Date:**

UNIT: 004 SERVICE TOOLS AND EQUIPMENT

Unit reference number: AUT/TRC/004/L1

QCF level: LEVEL 1

Credit value: 3 CREDITS

Guided learning hours: 30 HOURS

Unit Purpose: This unit is about the basic use of tools, materials and equipment relevant to the automotive tricycle sector.

This unit is about;

1. Interpreting information
2. Adopting safe and healthy working practices
3. Selecting materials and equipment
4. Service and maintenance of workshop tools & equipment
5. Storage of workshop tools and equipment

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O:1. Select workshop tools and materials	1.1	Identify types of workshop hand tools such as: marking tools, cutting tools, metal removing tools and fastening tools									
	1.2	Identify functions of workshop hand tools listed above									
	1.3	Select correct tools for marking operations									
	1.4	Select correct tools for metal removing operations									
	1.5	Select correct tools for fastening operations									
	1.6	Select correct tools for cutting operations									
L.O: 2 Use hand tools appropriately for cutting, filling, marking out and fastening											
	2.1	Carry out marking out operations									

operations.	2.2	Carry out filing operations									
	2.3	Carry -out cutting operations									
	3.1	Carry -out fastening operation.									
	3.2	Loose bolts and nuts with correct tools									
	3.3	Identify problems associated with incorrect tools use									
L.O. 3 Select materials for repairs and servicing operations	4.1	Identify materials for servicing in accordance to the manufacturer's specification such as : engine oil, differential oil, filters, plug, grease									
	4.2	Identify materials for repairs such as: Gaskets, sealants, seals, fittings Fasteners									
	4.3	Select correct personal protective equipment for different operations									
L.O. 5: Maintain workshop tools	5.1	Service tools as specified by manufacturer's /workshop requirement.									
	5.2	Use tools as specified by manufacturer's /workshop requirement.									
	5.3	Store tools as specified by manufacturer's /workshop requirement									

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EQA Signature (if sampled)	**Date:**

UNIT: 005 ENGINE SYSTEM REPAIRS

Unit reference number: AUT/TRC/005/L1

QCF level: LEVEL 1

Credit value: 4

Guided learning hours: 40 HOURS

Unit Purpose: This unit is about conducting routine examination, adjustment and replacement activities as part of the periodic servicing of 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 shop environment effectively. Live engines and functional tri-cycle shall be provided.

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

L.O (Learning outcome)	Criteria:-		Evidence Type					Evidence Ref Page number			
L.O. 1 Demonstrate knowledge of 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 Service tricycle engine											
	2.1	Examine the tricycle system and components following the manufacturer's approved methods.									

	2.2	Select correct tools/equipment for servicing a tricycle engine									
	2.3	Identify genuine filter, plug and lubricants in line with manufacturer's specification									
	2.4	Carry out tricycle servicing activities such as: Spark plugs cleaning Fuel filter cleaning Air filter cleaning									
	2.5	Change engine oil									
L.O.3 Assist in the servicing of carburettor	3.1	Identify the faults by visual inspection, direct observation and sound.									
	3.2	State manufacturer's service information for each machine									
	3.3	Identify tools/equipment for tricycle carburettor servicing									
	3.4	Assist in dismantling the carburettor to clean jets/ nut of blockage									
	3.5	Assist in replacing worn or damage parts.									
	3.6	Assist in assembling the carburettor									

Learners Signature:	**Date:**
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EQA Signature (if sampled)	**Date:**

UNIT: 006 WHEEL TYRES, STEERING & SUSPENSION

Unit reference number: AUT/TRC/006/L1

QCF level: 1

Credit value: 3

Guided learning hours: 30

Unit Purpose: This unit is about inspecting standard tricycle tyres and wheels to assess their conditions and suitability. It includes assisting in the replacement and repair procedures for wheels, tyres, steering & suspension.

Unit assessment requirements/evidence requirements;

This assessment can only be carried out in a real automotive tricycle workshop environment in which replacement and repair procedures for wheels, tyres, steering & suspensions are carried out.

Assessment method will include

1. Direct Observation (DO)
2. Question and Answer/ oral questions (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 Carry-out steering service	1.1	Service the steering bearing									
	1.2	Service the steering bushings									
	1.3	Identify faults relating to steering									
	1.4	Select correct tools									
	1.5	Assist to dismantle the steering units									
	1.6	Assist to replace damaged parts such as: steering bushings steering bearing (top and bottom) centre bearing									

	1.7	Assist to assemble the steering unit									
L.O: 2. Demonstrate the ability to carry out repairs on Tri-cycle 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	Assist to dismantle suspension unit									
	2.6	Assist to replace damaged parts such as: shock absorber(Oil seal and spring) linkages suspension bushings									
	2.7	Assist to assemble the suspension unit.									
L.O.3: Carry out repair in tyre and tubes	3.1	Identify types and tubes used in Tricycles									
	3.2	Use correct tools and techniques remove the tire from the wheel									
	3.3	Check the condition of the tire									
	3.4	Check for leakages									
	3.5	Repair tube and tyre									
	3.6	Couple back tire on the wheel.									
	3.7	Inflate tyre according to the manufacturer's specification									
L.O. 4 Demonstrate the ability to carry out wheel alignment repairs		Check wheel alignment									
		Identify causes of miss-alignment									
		Remove wheel from hub with correct tools.									
		Check the bearing and bushing									
		Replace the damaged bearing and bushing									
		Assemble the wheel									

Learners Signature:	**Date:**
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