


	<b>External Assessment Specifications Document</b>			
<b>Curriculum Code</b>	<b>Qualification Title</b>	<b>NQF Level</b>	<b>QCTO</b>	
653401000	<b>Occupational Certificate: Bicycle Mechanic</b>	4		
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# 1 ASSESSMENT STRATEGY

## 1.1 Assessment Model

An external integrated summative assessment, conducted through the relevant QCTO Assessment Quality partner is required for the issuing of this qualification. The external integrated summative assessment will focus on the exit level outcomes and associated assessment criteria. The external summative assessment will be conducted through a final practical demonstration and theoretical assessment conducted at an approved assessment center or site and evaluated by an assessor registered with the AQP.

## 1.2 Qualification Purpose

The purpose of this qualification is to prepare a learner to operate as a Bicycle Mechanic

A Bicycle Mechanic Bicycle mechanics fit, maintain service and repair the mechanical and related equipment of bicycles (non-motorized).

A qualified learner will be able to:

- Assemble new bicycles and apply safety procedures
- Perform minor and major services to maintain bicycles (excluding suspension and wheel building)
- Examine and repair bicycles and replace and repair components and accessories, such as hydraulic brake systems, driving chain mechanism, advanced wheels, etc.
- Supervise teams and activities in the bicycle workshop ensuring productivity and quality and provide advanced technical advice to the team

## 1.3 Assessment Standards

### 1.3.1 Assessment Standards for the Qualification

#### **Integrated Assessment Focus Area 1**

Examine, conduct fault finding and trouble shooting and solve problems related to any two (random selection) of these basic bicycle systems: headsets, crank sets, hubs, cable operated breaks, derailleurs and drive chains (25%)

#### ***Associated Assessment Criteria***

- A bicycle is inspected to identify faults and causes are correctly pinpointed
- Bicycle systems are inspected to identify faults and causes are correctly pinpointed
- An approved fault finding sequence is applied to diagnose a range of faults, wear and/or damage and causes are correctly pinpointed
- An approved fault finding sequence is applied to diagnose faults related to bicycle attachments
- Faulty basic bicycle mechanisms are repaired by dismantling, conducting repair and assembling of bicycle parts

#### **Integrated Assessment Focus Area 2**

Conduct advanced componentry disassembly, servicing/replacement, installation and adjustment of any (random selection) two of the advanced components: hydraulic brakes, suspension system, electronic group set, rear shock bushing replacement and pivot servicing (25%)

### ***Associated Assessment Criteria***

- Job cards, manufacturer specifications and diagrams are correctly read and interpreted
- Faulty bicycle mechanisms are repaired by dismantling, conducting repair and assembling of machine parts
- Componentry parts are correctly selected taking into account compatibility such as brand and size
- The installation of correct componentry parts for a specific repair function is conducted
- Bicycle componentry parts (which are within tolerance) are reconditioned and replaced.
- Bicycle componentry and parts are cleaned and lubricated where required.
- Repairs are done utilizing the procedure and tools
- Advanced componentry disassembly, servicing/replacement, installation and adjustment is conducted applying mechanical or engineering principles
- The correct equipment and consumables are selected for the task
- The advanced bicycle componentry is repaired without causing damage to the bicycle, advanced componentry and parts
- Completed work is inspected for accuracy according to manufacturer specifications and quality

### **Integrated Assessment Focus Area 3**

Build an advanced rear wheel (straight pull spoke or fat bike wheel build) to produce a wheel which is correctly dished and trued both laterally and radially within tolerances (25%)

### ***Associated Assessment Criteria***

- A wheel is de-tensioned in preparation for the wheel building activity
- Wheel parts are inspected for wear or damage
- The length of the spoke is accurately calculated
- Spoke tension is determined
- Wheel lacing is conducted
- Wheel dishing is conducted
- Wheel truing is conducted
- Completed work is inspected for accuracy according to
- Work is performed in compliance with manufacturer specifications and quality

### **Integrated Assessment Focus Area 4**

Demonstrate an understanding of the technical aspects and underpinning theory of bicycle construction, assembly and repair (10%)

### ***Associated Assessment Criteria***

- The mechanical principles related to the mechanical functioning and composition of a bicycle are described
- The mechanical principles related to the mechanical functioning of advanced componentry are explained
- The in-store capability of performing the repair/service is assessed and the methods of the repair (tools, skills, parts, warranty) is verified
- The importance of maintaining high level professionalism with customers and apply customer care is justified
- Ways and means to find and record information (stock control, job card, etc.) are compared

### **Integrated Assessment Focus Area 5**

Advise on bicycle workshop operations, achievement of targets and problem solving and advise clients on specialised bicycle componentry 15%

#### ***Associated Assessment Criteria***

- Demonstrate an advanced understanding of the consumables, threads and materials
- Advise bicycle mechanics and servicing and repair operations in the bicycle workshop
- Apply research skills to identify faults, defects and possible causes and formulate researched solutions
- Professionally liaise with customers and suppliers asking and giving information and advice

### **1.3.2 Assessment Standards for Phases**

Not applicable

### **2 ASSIGNMENTS TO BE EVALUATED EXTERNALLY**

Not applicable

### **3 CRITICAL ASPECTS OF THE INTERNAL ASSESSMENTS TO BE ASSESSED EXTERNALLY**

- Not applicable

### **4 CRITERIA FOR THE REGISTRATION OF ASSESSORS**

- Qualifications: NQF level 4 qualified in bicycle maintenance and repair or related field or a similar international qualification
- Experience: 2 years of experience as a senior bicycle mechanic
- Assessor qualification: Recognised assessor unit standard or equivalent
- Registration with a professional body: Not required
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### **5 FOUNDATIONAL LEARNING**

Foundational learning is required for achieving this qualification

## 6 ELIGIBILITY REQUIREMENTS FOR THE EXTERNAL ASSESSMENT

In order to qualify for the external summative assessment learners must have a copy of a completed and signed Statement of Work Experience as well as proof of successful completion of the following subjects and modules or alternative programmes where applicable.

### 6.1 Qualification

	<i>Proof of Knowledge Modules</i>			<i>OR</i>			<i>Proof of Alternative Programmes</i>	
<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>		<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>
653401000-KM-01	Bicycle construction and assembly	2	3					
653401000-KM-02	Bicycle servicing and maintenance	3	3					
653401000-KM-03	Repair and maintenance of advanced bicycle componentry	04	3					
653401000-KM-04	Bicycle consumables, threads and materials technology	04	5					
653401000-KM-05	Advice on specialised bicycle componentry	03	4					

<i>Proof of Practical Skill Modules</i>				<i>OR</i>	<i>Proof of Alternative Programmes</i>			
<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>		<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>
653401000-PM-01	Wash, clean and assemble new bicycles	2	4					
653401000-PM-02	Perform minor and major services for the maintenance of bicycles (excluding suspension and wheel building)	3	6					
653401000-PM-03	Conduct disassembly, servicing/replacement, installation and testing of advanced bicycle componentry	04	4					
653401000-PM-04	Advise clients and bicycle mechanics on the technical aspects to identify faults and solve problems	04	1					
653401000-PM-05	Advise teams in a fair and consistent manner in the bicycle workshop to achieve set targets and outputs and specialised problem solving	03	1					

**And**

**Statement of Work experience**

### **6.2 Phase 1**

No phase tests applicable

## 6.3 Part Qualification

### Part Qualification 1:

#### Title:

Bicycle Repairer, NQF Level 3, Credits 43

#### Purpose:

Bicycle Repairers work safely and efficiently in the workshop environment and is technically qualified and able to assemble new bicycles and conduct minor and major services to maintain and repair bicycles and basic bicycle componentry to a high standard

#### Applicable Modules (Rules of Combination)

##### Knowledge Modules:

- 653401000-KM-01, Bicycle construction and assembly, NQF Level 2, Credits 3
- 653401000-KM-02, Bicycle servicing and maintenance, NQF Level 3, Credits 3

Total number of credits for Knowledge Modules: 6

##### Practical Skill Modules:

- 653401000-PM-01, Wash, clean and assemble new bicycles, NQF Level 2, Credits 4
- 653401000-PM-02, Perform minor and major services for the maintenance of bicycles (excluding suspension and wheel building), NQF Level 3, Credits 6

Total number of credits for Practical Skill Modules: 10

This qualification also requires the following Work Experience Modules:

- 653401000-WM-01, Bicycle assembly, cleaning and washing, NQF Level 2, Credits 11
- 653401000-WM-02, Perform minor and major services for the maintenance of bicycles, NQF Level 3, Credits 16

Total number of credits for Work Experience Modules: 27

##### Assessment Qualification Standards:

- Examine, conduct fault finding and trouble shooting and solve problems related to any two (random selection) of these basic bicycle systems: headsets, crank sets, hubs, cable operated breaks, derailleurs and drive chains (25%)

### Part Qualification 2:

#### Title:

Bicycle Special Components Repairer, NQF Level 4, Credits 28

#### Purpose:

Bicycle Mechanics build, service and repair bicycles and advance bicycle componentry and able to install and calibrate top-level electronic group sets, service complex suspension systems and hydraulic brakes as well as building high-performance wheel sets

#### Applicable Modules (Rules of Combination)



Knowledge Modules:

- 653401000-KM-03, Repair and maintenance of advanced bicycle componentry, NQF Level 04, Credits 3

Total number of credits for Knowledge Modules: 3

Practical Skill Modules:

- 653401000-PM-03, Conduct disassembly, servicing/replacement, installation and testing of advanced bicycle componentry, NQF Level 04, Credits 4

Total number of credits for Practical Skill Modules: 4

This qualification also requires the following Work Experience Modules:

- 653401000-WM-03, Advanced bicycle componentry servicing, NQF Level 04, Credits 21

Total number of credits for Work Experience Modules: 21

Assessment Qualification Standards:

- Conduct advanced componentry disassembly, servicing/replacement, installation and adjustment of any (random selection) two of the advanced components: hydraulic brakes, suspension system, electronic group set, rear shock bushing replacement and pivot servicing (25%)
- Build an advanced rear wheel (straight pull spoke or fat bike wheel build) to produce a wheel which is correctly dished and trued both laterally and radially within tolerances (25%)