BQA NCQF QUALIFICATION TEMPLATE

SECTION A:	QUALIFICATION DETAILS																			
QUALIFICATION DEVELOPER (S)	Madirelo Training and Testing Centre																			
TITLE	Certificate V in Electronics														**NCQF LEVEL**		5			
STRANDS (where applicable)	NA																			
FIELD	Manufacturing, Engineering and Technology							**SUB-FIELD**	Engineering and Engineering Trades						**CREDIT VALUE**		120			
New Qualification			√											Legacy Qualification						
SUB-FRAMEWORK	General Education				TVET		√	Higher Education												
QUALIFICATION TYPE	Certificate	I		II		III		IV		V	√	Diploma		Bachelor						
	Bachelor Honours			Post Graduate Certificate				Post Graduate Diploma												
	Masters			Doctorate/ PhD																

RATIONALE AND PURPOSE OF THE QUALIFICATION

RATIONALE:

The need for development of this qualifications was informed by the following: The Botswana Vision 2036 states that development of the human capital and the informal sector and the micro and small enterprises (MSES) are essential in achieving the VISION 2036 pillars, in particular Sustainable Economic Development and Human and Social Development. Although Botswana has been fortunate to experience unprecedented economic growth since independence, this has not generated enough jobs to reduce unemployment. The most severely hit group amongst the unemployed is the youth, who account for about 51.7 % of the total unemployed, with the 15-19 age group most affected.

In line with this strategic goal of the Human Resource Development Committee (HRDC) priority skills and employment trends; which forecasted Botswana's demand for year 2019 to 2028, skills for Electronics installers and servicers will still be in demand during that period as it showed on the report. Furthermore, the HRDC report 2023/24 indicates Electronics as a technical skills required in almost six occupations.

In addition, the need for the development of Electronics qualification at this level is informed by the labour market in the country in whereby a lot of foreigners occupy most of the posts in the repair and servicing of Electronics systems that is in Radio and Television equipment repairs, Mobile cell phone repairs and Audio visual equipment installation and repairs.

MULTI-TOPIC SURVEY QUARTER 3, 2023 LABOUR FORCE MODULE REPORT as indicated by Statistics Botswana:
Percentage of Currently Employed by Occupation, Citizenship & Sex Quarterly Multi Topic Survey (QMTS) Q3, 2023.

Occupation:	Craft and Related Workers
Citizens:	9.7%
Non-Citizens:	16.1%

Upon evaluation, it was realised that the proposed qualification should also be registered on the framework, the following are the findings after comparison to the existing Certificate V in Electronics (Q0370):

- Following international trends used from benchmarking information, proposed and benchmarked ones all have modules distributed across three (3) levels, that is level III, IV and V whereas the existing one has only level V. Therefore, the proposed qualification is more aligned to the benchmark.
- Proposed qualification has workshop practice and work based learning/ attachment for three (3) months in level V, whereas the existing one has workshop practice only.
- Proposed qualification has a project to enhance learning of skill whereas the published qualification does not.
- Proposed qualification incorporates mathematics at all levels compared to existing one.

PURPOSE: (itemise exit level outcomes)

The purpose of this qualification is to produce graduates with broad technical knowledge, skills and competence to:

1. Install Electronics and telecommunication systems in accordance with job specifications.
2. Commission Electronics and telecommunications systems in accordance with job specifications.
3. Maintain Electronics and telecommunications systems in accordance with manufacturer specifications
4. Service different domestic programmable systems in line with operational manual
5. Identify a viable business venture and prepare a business plan
6. Demonstrate skill and competence to engage in vocational relevant tasks, be it in an organization or vocational context.

MINIMUM ENTRY REQUIREMENTS (including access and inclusion)

- Certificate IV, NCQF Level 4.

- Any relevant part qualification at NCQF Levels V may render the candidate eligible for exemptions or credit transfer in accordance with applicable policies.
- Candidates with relevant unaccredited prior learning may be considered for admission and or exemption through Recognition of Prior Learning (RPL) Assessment.

(Note: Please use Arial 11 font for completing the template)

SECTION B	***QUALIFICATION SPECIFICATION***
GRADUATE PROFILE (LEARNING OUTCOMES)	***ASSESSMENT CRITERIA***
1. Install Electronics and telecommunication systems in accordance with job specifications.	1.1 Follow health and safety risk control measures and procedures are followed in preparation for the work. 1.2 Determine the location of the work from documentation to establish the scope of work to be undertaken. 1.3 Select tools, equipment and testing devices needed to carry out the work and check for correct operation and safety. 1.4 Set up and install systems according to the plan and manufacturer's instructions using safe industry practices. 1.5 Undertake visual inspection to confirm termination sequence in accordance with industry standards. 1.6 Configure and program the system in accordance with manufacturer's specifications. 1.7 Carry out system performance tests in accordance with manufacturer's specifications. 1.8 Document work completion in accordance with established procedures.
2. Commission Electronics and telecommunications systems in accordance with job specifications.	2.1 Examine job specification to determine the tools and materials required for commissioning. 2.2 Select tools, instruments and materials for carrying out the job.

	2.3 Test systems for functionality in accordance with industry practice. 2.4 Analyse and record system performance as per manufacturer specification. 2.5 Commission systems in accordance with industry practice. 2.6 Hand over system in accordance with industry practice. 2.7 Store materials and tool in accordance with organisational requirements
3. Maintain Electronics and telecommunications systems in accordance with manufacturer specifications	3.1 Follow risk control measures and procedures in preparation for the work. 3.2 Obtain nature of the maintenance from system documentation. 3.3 Establish materials required for the work in accordance with organization procedures. 3.4 Select tools, equipment and testing devices needed to carry out the work in accordance with established procedures. 3.5 Carry out maintenance in accordance with manufacturer specification. 3.6 Recommend and carry out system modification in accordance with manufacturer specifications 3.7 Reassemble and test system performance in accordance with established procedures. 3.8 Record and update system documentation in accordance with established procedures. 3.9 Clean work area in accordance with established procedures.
4. Service different domestic programmable systems in line with operational manual	4.1 Identify different blocks of programmable system in accordance with manufacturer specifications. 4.2 Interpret micro controller procedure as per manufacturer manual. 4.3 Identity various integrated chips and their functions on the given Microcontroller Kit 4.4 Identify the address range of Random Access Memory and Read Only Memory.

	4.5 Write data into Random Access Memory RAM in accordance with job specification 4.6 Identify and configure micro-controller ports for input and output operation. 4.7 Enter simple programs, execute and monitor the results. 4.8 Re-programme and test domestic systems in accordance with manufacturer specification
5. Autonomously assess the viability of a chosen venture and develop its business plan and implementation schedule for submission to potential financiers.	5.1 Identify and assess a venture of interest 5.2 Conduct a market survey to assess the viability of the project in its target area. 5.3 Develop a plan for the chosen venture including an overview of the business, operations, marketing, human resources and financial projections adequate for funders. 5.4 Schedule for implementation of the business plan in the form of a gantt chart (or any suitable presentation technique).
6. Apply effective fundamental and problem solving skills while performing assigned duties/tasks according to the set industry standards in an actual work environment.	6.1 Communicate and Negotiate and with stakeholders to initiate a industrious work based learning experience 6.2 Perform assigned vocation related tasks to the required standards 6.3 Apply effective fundamental (core) skills throughout the duration of the work based learning program. 6.4 Adhere to health and safety requirements at all times 6.5 Demonstrate problem solving skills as and when problems are encountered during the work process 6.6 Contribute effectively to team work initiatives within the work environment 6.7 Evaluate the work based learning experience, to determine its benefits and or limitations

SECTION C	***QUALIFICATION STRUCTURE***				
COMPONENT	***TITLE***	***Credits Per Relevant NCQF Level***			***Total Credits***
		Level [ ]	***Level [ ]***	***Level [v]***	
FUNDAMENTAL COMPONENT *Subjects/ Courses/ Modules/Units*	Entrepreneurship I			11	**11**
CORE COMPONENT *Subjects/Courses/ Modules/Units*	Microprocessor Based Systems I			8	8
	Networking			6	6
	Consumer Electronics			10	10
	Communication systems II			10	10
	Mathematics III			5	5
	Project			12	12
	Work Based Learning/Industrial Attachment			48	48
STRANDS/ SPECIALIZATION	*Subjects/ Courses/ Modules/Units*	***Credits Per Relevant NCQF Level***			***Total Credits***
		Level [ ]	***Level [ ]***	***Level [ ]***	

1.					
2.					
Electives	Security Systems			10	10
	Office Equipment Systems			10	10

SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL	
TOTAL CREDITS PER NCQF LEVEL	
NCQF Level	***Credit Value***
5	***120***
TOTAL CREDITS	***120***
Rules of Combination: ***(Please Indicate combinations for the different constituent components of the qualification)***	
To be awarded this qualification, candidate should achieve 120 credits; 11 credits for Fundamentals, 99 credits for Core, 10 credits for Electives and 48 credits for Industrial Attachment.	

(Note: Please use Arial 11 font for completing the template)

ASSESSMENT ARRANGEMENTS

The weightings for the assessment will be as follows:

1. Formative assessment

The weighting of formative assessment is 60% of the final assessment mark.

2. Summative Assessment

The weighting of summative assessment is 40% of the final assessment mark

MODERATION ARRANGEMENTS

Internal and external moderation are performed in assessments for the qualification. Assessors and moderators are BQA registered and accredited. Both internal and external moderation are done in-line with the national moderation policy expectations

RECOGNITION OF PRIOR LEARNING

There shall be provision for award of the qualification through Recognition of Prior Learning (RPL) in accordance with institutional policies in line with the national RPL policy.

CREDIT ACCUMULATION AND TRANSFER

Credits Accumulated and Transfer will be administered in line with the national and institutional policy.

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

LEARNING PATHWAYS

Horizontal Articulation

Graduates of this qualification may consider pursuing related qualifications in the following:

- Certificate V in Telecommunications
- Certificate V in Instrumentation

Vertical Articulation

- Diploma in Electronics engineering
- Diploma in Telecommunications
- Diploma in Instrumentation

QUALIFICATION AWARD AND CERTIFICATION

Employment Pathways

Holders of this qualification can work as; but not limited to:

- Electronics Equipment Assistant Technician
- Electrical Appliance Serviceperson
- Security System Installer
- Business Equipment Assistant Technician
- TV and Video Repairer
- Electronics and Communications Tradesperson
- Gaming Machine Repairer

SUMMARY OF REGIONAL AND INTERNATIONAL COMPARABILITY

1. Tittle:
   The title for the developed qualification and those benchmarked against are all certificate qualification hence they have similarities.

2. Level
   The qualification level for all three qualifications is the same /or equal as it is level 5.

3. Credits:
   The credits for all the qualifications are within the same range, the developed qualification has 120 credits, benchmarked ones are Certificate V in Electronics 105 credits and National Certificate: Electronics SAQA 135 credits. The developed qualification credits are within the range compared to the benchmarked ones. The developed qualification meets the regionally and internationally standards
4. Main Exit Outcomes:
   All the qualifications are similar as they all impart knowledge, skills and competence in electronics and telecommunication systems.

5. Domains/Modules/Courses/Subjects
   Comparison was done and it indicates that all qualifications cover similar modules

6. Assessment strategies and Weightings
   Assessment strategies are the same for the qualifications as they cover formative, summative and practical assessments.

7. Qualification rules
   The developed qualification has only fundamentals and core modules whereas the benchmarked ones have fundamental, core and electives

REVIEW PERIOD

This qualification shall be reviewed after every 5 years.

BQA NCQF QUALIFICATION TEMPLATE

(Note: Please use Arial 11 font for completing the template)

For Official Use Only:

CODE (ID)			
REGISTRATION STATUS	**BQA DECISION NO.**	**REGISTRATION START DATE**	**REGISTRATION END DATE**
LAST DATE FOR ENROLMENT		**LAST DATE FOR ACHIEVEMENT**	
REVISION DATE:		**NAME OF PROFESSIONAL BODIES/REGULATORY**	