BQA NCQF QUALIFICATION TEMPLATE

SECTION A:	QUALIFICATION DETAILS																	
QUALIFICATION DEVELOPER (S)	Madirelo Training and Testing Centre																	
TITLE	Certificate iii In Electronics											**NCQF LEVEL**		3				
STRANDS (where applicable)	N/A																	
FIELD	Manufacturing, Engineering and Technology											**CREDIT VALUE**		120				
SUB FIELD	Engineering and Engineering Trades																	
New Qualification	✓	Legacy Qualification		Renewal Qualification	N/A													
				Registration Code	N/A													
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%

PURPOSE: (itemise exit level outcomes)

The purpose of this qualification to produce graduates with basic operational and theoretical knowledge, skills, and competence:

1. Set up electronic devices according to manufacturer specifications.
2. Connect circuits, cables, and components ensuring correct polarity, grounding, and compliance with safety standards.
3. Perform routine inspections, replace faulty parts, update firmware/software, and ensure systems remain operational.
4. Use ICT for information retrieval and processing as well as communication and collaboration with others.
5. Communicate with clients, colleagues and others using appropriate forms of communication techniques.

MINIMUM ENTRY REQUIREMENTS (including access and inclusion)

Minimum entry requirement for this qualification is a:

- Certificate II, NCQF Level 2 qualification or equivalent.
- Applicant may be considered through Recognition of Prior Learning (RPL) and Credit Accumulation and Transfer (CAT).

SECTION B	QUALIFICATION SPECIFICATION
GRADUATE PROFILE (LEARNING OUTCOMES)	**ASSESSMENT CRITERIA**
1. Apply basic operational and theoretical mathematical concepts to solve problems in electronics field.	1.1 Apply basic mathematical principles and techniques to solve problems in numbering system 1.2 Solve equations requiring variable that appears one or both sides of the equation. 1.3 Use basic geometrical principles to determine solution for different shapes. 1.4 Apply trigonometric functions to solve application problems involving unknown sides of right triangles
2. Apply basic operational and theoretical principles of drawing in Electronics field.	2.1 Demonstrate basic knowledge of electrical symbols and terminology. 2.2 Interpret drawings to determine appropriate drawing tools and equipment to be used. 2.3 Produce technical drawings according to specification 2.4 Draw electrical circuits using standard symbols. 2.5 Maintain drawing equipment and tools according to manufacturer specification.
3. Use basic operational and theoretical knowledge of electrical and electronics principles in solving Electronics related problems.	3.1 Demonstrate knowledge of basic electrical quantities as applied in electrical field. 3.2 Describe basic functions and operation of passive and active electronics components 3.3 Apply basic concepts of D.C and A.C circuits in electrical application 3.4 Demonstrate knowledge of basic concepts of magnets and magnetism. 3.5 . Determine operation and application of different semiconductor materials.
4. Demonstrate basic operational knowledge of electronic components, instruments and test equipment in building basic circuits.	4.1 Interpret different diagram representations used to build electronics circuits. 4.2 Build basic electronic circuits using various tools, equipment and components using diagrams. 4.3 Test circuit for functionality to ensure conformity to specifications.

	4.4 Maintain tools and equipment in appropriate places in accordance with organizational requirements.
8. Communicate with clients, colleagues and others using appropriate forms of communication techniques	8.1 Apply communicational fundamental principles and processes to facilitate accurate information exchange in the workplace. 8.2 Apply Verbal and Non-Verbal Communication Techniques in the Professional Environment. 8.3 Communicate using digital technologies to share information.
9. Apply Computer concepts to solve real world problems	9.1 Apply hardware and software functions to perform technical and professional tasks 9.2 Apply ethical and safe practices in the use of ICT ensuring digital activities are secure. 9.3 Manage information to transform raw data into valuable insights. 9.4 Produce documents using ICT applications in compliance with organizational standards. 9.5 Communicate using digital technologies to share information, collaborate, and connect effectively.

SECTION C	**QUALIFICATION STRUCTURE**				
COMPONENT	**TITLE**	**Credits Per Relevant NCQF Level**			**Total Credits**
		Level [3]	**Level [4]**	**Level [5]**	
FUNDAMENTAL COMPONENT Subjects/ Courses/ Modules/Units	Communication Skills	10			10
	Information and Communications Technology (ICT)	10			10
CORE COMPONENT Subjects/Courses/	Mathematics	18			18
	Engineering Drawing	12			14

Modules/Units	Electrical and electronics Principles	20			20
	Analogue Electronics Circuits	28			28
	Workshop Practice	20			20
STRANDS/ SPECIALIZATION	Subjects/ Courses/ Modules/Units	**Credits Per Relevant NCQF Level**			**Total Credits**
		Level [3]	**Level [4]**	**Level [5]**	
1.					
2.					
Electives	**NA**				

SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL	
TOTAL CREDITS PER NCQF LEVEL	
NCQF Level	**Credit Value**
NCQF 3	**120**
TOTAL CREDITS	**120**
Rules of Combination: **(Please Indicate combinations for the different constituent components of the qualification)**	
A candidate has to achieve a minimum of 120 credits for the qualification inclusive of 20 credits for fundamental and 100 credits for core.	

ASSESSMENT ARRANGEMENTS

The weightings for the assessment will be as follows:

a) Formative assessment

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

b) Summative Assessment

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

Assessors must hold a Certificate IV in Electronics or better.

MODERATION ARRANGEMENTS

Internal and external moderators perform assessments of the qualification. Both internal and external moderators are done in-line with the national assessment policy. Anyone moderating a learner against this qualification must be registered as a moderator with Botswana Qualifications Authority. Moderators must hold a Certificate IV in Electronics or better.

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 and will be administered towards the award of qualification

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

Horizontal Articulation

Graduates may progress to qualifications such as:

- Certificate III in Telecommunications
- Certificate III in Instrumentation
- Certificate III in Electrical
- Certificate III in Renewable Energy

Vertical Articulation

- Certificate IV in Electronics engineering
- Certificate IV in Electrical engineering
- Certificate IV in Telecommunications
- Certificate IV in Instrumentation

Employment Pathways

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

- Electronics Equipment Semi Skilled Technician
- Electronics Tradesperson Assistant
- Electrical Appliance Serviceperson Assistant

QUALIFICATION AWARD AND CERTIFICATION

Minimum standards of achievement for the award of the qualification

A candidate is required to achieve the stipulated total of 120 credits inclusive of the 20 fundamental and 100 core components to be awarded the Certificate III in Electronics.

Certification

Candidates meeting prescribed requirements will be awarded Certificate in addition to transcript.

SUMMARY OF REGIONAL AND INTERNATIONAL COMPARABILITY

Title of Qualification
Similarities

- Both titles emphasize electronics/electrical technology as the core discipline and include clear regulatory markers as Certificate or National Certificate.

Differences

- Title wording Electrotechnology" (Universal College of Learning) vs. "Electronics" (SA). The UNIVERSAL COLLEGE OF LEARNING: title signals a broader integration of electrical + electronic systems, while SA focuses on electronics only.
- Structure: Universal College of Learning qualification includes **strands (Installation, Service)**, while SA qualification is a single certificate without strands.
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NQF Level
Similarities

- Both are Level 3 qualifications under their respective national frameworks.

Credit Value or Duration (where applicable)
Similarities

- Both use credit systems to measure learning volume.

Differences

- Credit load differs as Universal College of Learning has 95 credits whereas TIPP Academy (PTY) LTD has 120 credits.

Main Exit Outcome(s)
Similarities

- Both qualifications emphasizes safety, technical competence, servicing/maintenance skills and are competency-based, requiring demonstration of practical skills.

Differences

- Universal College of Learning focuses on electrotechnology breadth (electrical + electronic systems, licensing), while TIPP Academy (PTY) LTD focuses on electronics specialization (circuits, ICT hardware).
- Universal College of Learning outcomes include electrical apprenticeships and appliance servicing and TIPP Academy (PTY) LTD outcomes emphasize electronics repair and ICT support.

Modules

Similarities

- Both include safety/regulations modules, cover fundamental electronics principles and circuits, emphasize installation, testing, and servicing and integrate professional practice and communication skills.

Differences

- Universal College of Learning modules cover electrotechnology breadth electrical + electronic systems, ICT, appliance servicing while TIPP Academy (PTY) LTD modules focus on electronics specialization (circuits, ICT hardware, and consumer electronics).
- Universal College of Learning explicitly includes ICT and automation and TIPP Academy (PTY) LTD emphasizes ICT hardware and digital systems.

Assessment strategies and Weightings

Similarities

- Both use competency-based assessment; there is combination of practical demonstrations, written theory, and workplace evidence.

Differences

- Universal College of Learning places slightly more emphasis on practical skills and safety compliance, while TIPP Academy (PTY) LTD places more emphasis on theoretical electronics knowledge.

Qualification rules and minimum Standards for the award of the qualification

Similarities

- Both are competency-based qualifications (no partial awards).
- Both require completion of all prescribed modules/units.
- Both emphasize safety and compliance as minimum standards.

Differences

- Universal College of Learning qualification rules include strands (Installation or Service) and uses Achieved/Not Achieved , while TIPP Academy (PTY) LTD qualification rules are fixed across electronics modules and uses Competent/Not Yet Competent.

Education and Employment Pathways

Similarities

- Both qualifications provide clear progression routes to higher-level study (Level 4+).
- Both emphasize practical workplace readiness.

Differences

- Universal College of Learning pathways emphasize electrotechnology breadth (electrical + electronic + ICT), while TIPP Academy (PTY) LTD pathways emphasize electronics specialization (repair, ICT hardware).
- Universal College of Learning graduates often enter electrical apprenticeships and appliance servicing, while TIPP Academy (PTY) LTD graduates enter electronics repair and ICT support roles.

REVIEW PERIOD

This qualification shall be reviewed every five years, however review may be undertaken earlier as needed.

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**	