

## BQA NCQF QUALIFICATION TEMPLATE

<b>SECTION A: QUALIFICATION DETAILS</b>												
<b>QUALIFICATION DEVELOPER (S)</b>	Joint Technical Training School (Botswana Defence Force)											
<b>TITLE</b>	Certificate V in Ammunition						<b>NCQF LEVEL</b>	5				
<b>STRANDS (where applicable)</b>	N/A											
<b>Field</b>	Manufacturing, Engineering and Technology			<b>SUB-FIELD</b>	Engineering and Engineering Trades			<b>CREDIT VALUE</b>	240			
New Qualification				√	Legacy Qualification							
<b>SUB-FRAMEWORK</b>	General Education			TVET			√	Higher Education				
<b>QUALIFICATION TYPE</b>	Certificate	I	II	III	IV	V	√	Diploma	Bachelor			
<i>Bachelor Honours</i>		<i>Post Graduate Certificate</i>			<i>Post Graduate Diploma</i>							
<i>Masters</i>					<i>Doctorate/ PhD</i>							
<b>RATIONALE AND PURPOSE OF THE QUALIFICATION</b>												
<p><b>RATIONALE:</b></p> <p>This qualification is entirely designed to meet the needs of the Botswana Defence Force (BDF) by providing standards against which Ammunition Technicians can be trained. The qualification meets the needs of the BDF by producing technicians who are competent to perform specific tasks in the field of Ammunition and related accessories. The BDF is an independent force/army charged with the defence and security of the country. In order for the BDF to effectively undertake its mandate, it stocks different calibres of ammunition from international manufacturers. The ammunition is therefore, required to be kept in a good and serviceable state for use at any time when the need arise.</p> <p>A high level of training is required to equip technicians with relevant skill to perform routine ammunition checks. Thus, a high level of skill and competency is required to take care of the ammunition during storage and use. Training of technicians in the field is important as there is a lot to do with ammunition while serviceable or unserviceable. This is supported by the National Vocational Education and Training Policy (1998), which seeks among other things to deliver training</p>												

that meets the requirements of the industry. It provides a platform where the BDF will facilitate the match with the constant changing technological advancements.

This will also bring solutions to reduce the cost attached to purchase and demolition of the ammunition due to lack of expertise in storage and handling of the same. These activities would demand a lot of funding, hence the need to have trained personnel to advice on the levels and status of ammunitions. The technicians will manage and maintain the ammunition to avoid spending more funds in a situation where there are no trained personnel. The Training Needs Analysis conducted in 2023 revealed that there is a shortage in some aspects relating to Ammunition. Therefore, the qualification will address the existing gaps.

**References:**

1. Botswana Federation of Trade Unions Policy on Education in Botswana March, 2007
2. JTTS and CAS 2023 Training Needs Analysis Report

**PURPOSE:**

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

1. Conduct relevant procedures for the management of ammunition warehouse facilities ensuring optimal readiness and security.
2. Apply appropriate mechanical, electrical and engineering principles to ammunition maintenance operations and disposal tasks.
3. Demonstrate good workshop practices in compliance to ammunition engineering regulatory standards of health, safety and environmental protection.
4. Communicate and interpret technical information relating to ammunition systems in writing and verbally to relevant stakeholders.

**MINIMUM ENTRY REQUIREMENTS (including access and inclusion)**

1. Certificate IV at NCQF Level 4 or equivalent.
2. Access through RPL and CAT will be provided in line with ETP policies and National policies.

<b>SECTION B QUALIFICATION SPECIFICATION</b>	
<b>GRADUATE PROFILE (LEARNING OUTCOMES)</b>	<b>ASSESSMENT CRITERIA</b>
1. Perform procedural works and tasks in ammunition warehouse facilities to ensure their proper management.	1.1 Organize the layout of the warehouse to ensure optimal space utilization and safe storage practices. 1.2 Implement inventory management systems to track ammunition stock levels. 1.3 Apply security protocols to safeguard ammunition from unauthorized access. 1.4 Evaluate the condition of stored ammunition periodically.
2. Demonstrate knowledge of usage and handling of appropriate tools and equipment during maintenance and handling of munitions.	2.1 Select appropriate tools for specific ammunition maintenance tasks. 2.2 Demonstrate proper tool usage and handling techniques. 2.3 Inspect and maintain tools to ensure their readiness and reliability.
3. Demonstrate understanding of basic engineering management principles and ethics.	3.1 Implement risk management strategies to ammunition maintenance operations. 3.2 Use resource management techniques for development of personnel and utilisation of time and material in ammunition activities. 3.3 Apply engineering principles for effective management of ammunition.
4. Use established techniques, resources, and modern engineering tools including information technology for the troubleshooting, fixing and maintenance of various munitions.	4.1 Plan and schedule maintenance tasks according to the ammunition lifecycle. 4.2 Perform diagnostic procedures to identify ammunition faults or defects. 4.3 Execute maintenance and repair tasks with precision and adherence to safety standards
5. Demonstrate good workshop practices in accordance to required workplace health and safety standards.	5.1 Maintain cleanliness and organization within the workshop. 5.2 Apply standard operating procedures in all workshop activities. 5.3 Conduct regular equipment checks and calibrations. 5.4 Identify potential health and safety hazards in the workplace.

## BQA NCQF QUALIFICATION TEMPLATE

	5.5 Implement safety protocols and emergency response procedures.
6. Implement quality control measures and regulatory compliance in adherence relevant to munition engineering practice.	<p>6.1 Develop and implement quality control protocols for ammunition maintenance.</p> <p>6.2 Ensure compliance with relevant regulatory standards and guidelines.</p> <p>6.3 Review and improve quality control measures based on feedback and inspection results.</p>
7. Demonstrate ability to effectively communicate information within ammunition engineering context in writing and verbally to technical and non-technical stakeholders.	<p>7.1 Prepare clear and concise maintenance reports and documentation.</p> <p>7.2 Conduct effective verbal briefings and presentations.</p> <p>7.3 Listen and respond to feedback and inquiries effectively.</p>

## BQA NCQF QUALIFICATION TEMPLATE

<b>SECTION C</b>	<b>QUALIFICATION STRUCTURE</b>				
<b>COMPONENT</b>	<b>TITLE</b>	<b>Credits Per Relevant NCQF Level</b>			<b>Total Credits</b>
		<b>Level [ 4 ]</b>	<b>Level [ 5 ]</b>	<b>Level [ 6 ]</b>	
<b>FUNDAMENTAL COMPONENT</b> <i>Subjects/ Courses/ Modules/Units</i>	Mathematics		10		10
	Physics		10		10
	Computer Technology		6		6
	Technical Drawing		8		8
	Workshop Technology		10		10
	Technical Communication		6		6
	<b>Total</b>		<b>50</b>		<b>50</b>
<b>CORE COMPONENT</b> <i>Subjects/Courses/ Modules/Units</i>	Basic Armament Systems		5		5
	Basic Ammunition		10		10
	Basic Small Arms		5		5
	Machining		10		10
	Material Science			10	10
	Basics of Ammunition		10		10
	Chemistry of Explosives		10		10
	Ammunition Design and Ballistics		10		10
	Hazardous Materials (HAZMAT)		10		10
	Basic Electronics		10		10

## BQA NCQF QUALIFICATION TEMPLATE

	Ammunition Handling & Storage			<b>10</b>	<b>10</b>
	Armoury Procedure & Documentation		<b>10</b>		<b>10</b>
	Guided Weapons: Missiles			<b>10</b>	<b>10</b>
	Disposal of Ammunition		<b>10</b>		<b>10</b>
	Physical Chemistry			<b>10</b>	<b>10</b>
	Apprenticeship I & II		<b>40</b>		<b>40</b>
	<b>TOTAL</b>		<b>140</b>	<b>40</b>	<b>180</b>
<b>STRANDS/ SPECIALIZATION</b>	<i>Subjects/ Courses/ Modules/Units</i>	<b>Credits Per Relevant NCQF Level</b>			<b>Total Credits</b>
		<b>Level [4]</b>	<b>Level [5]</b>	<b>Level [6]</b>	
<b>Electives</b>	Future Developments: Scanning the Horizon in Explosive Ordnance Engineering (EOE)			<b>10</b>	<b>10</b>
	Introduction to Explosives Engineering			<b>10</b>	<b>10</b>

## BQA NCQF QUALIFICATION TEMPLATE

### SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL

#### TOTAL CREDITS PER NCQF LEVEL

<i>NCQF Level</i>	<i>Credit Value</i>
LEVEL 5	190
LEVEL 6	50
<b>TOTAL CREDITS</b>	<b>240</b>

**Rules of Combination:**

*(Please Indicate combinations for the different constituent components of the qualification)*

To achieve the qualification, a learner must complete a total of 240 Credits comprising 50 Credits of Fundamental modules, 180 Credits from Core modules and at least 10 Credits from Electives modules.

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### **ASSESSMENT ARRANGEMENTS**

#### **Assessment**

Assessment will be integrated, made up of Formative and Summative assessments.

#### **Formative Assessment**

Formative assessment will be administered throughout the learning period in the form of written tests and practical. The ratio of written/theory tests to practical shall be 40/60 and Formative assessment shall contribute 50% to attain the final grade of the course.

#### **Summative Assessment**

A summative assessment will be administered at the end of each module. Summative assessment shall contribute 50% to the course final grade.

Assessment will be conducted by BQA registered and accredited assessors. Assessors must possess a minimum qualification of Diploma in Ammunition or related field with a teaching and assessment qualification (e.g. PGDE, CVET, DVET, PGDHE, etc).

### **MODERATION ARRANGEMENTS**

#### **MODERATION**

Both internal and external moderation will be carried out by BQA registered and accredited moderators in line with institutional policies.

Moderators must possess a minimum qualification at NCQF Level 6 in Ammunition or related field. The moderator should be highly experienced with a teaching and moderation qualification.

### **RECOGNITION OF PRIOR LEARNING**

RPL will be applicable for gaining credits towards the qualification in accordance with ETP policies that aligns with National RPL Policies.

### **CREDIT ACCUMULATION AND TRANSFER**

CAT will be applicable for gaining credits towards the qualification in accordance with ETP policies that aligns with National CAT Policies.

### **PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)**

#### **Learning Pathways**

### **Horizontal Articulation:**

1. Certificate V in Small Arms Engineering.
2. Certificate V in Bomb Disposal.

### **Vertical Articulation:**

1. Diploma in Bomb Disposal
2. Diploma in Ammunition.

### **Employment Pathways**

1. Ammunition Technicians
2. Armourer (Management of Armoury).

### **QUALIFICATION AWARD AND CERTIFICATION**

**Qualification Award:** To be awarded the qualification of Certificate in Ammunition, a candidate should satisfy the requirements of the qualification, which is 240 Credits comprising 50 Credits of Fundamental modules, 180 Credits from Core modules and 10 Credits from Electives modules.

**Certification:** Upon successful completion of all requirements of the qualification, the ETP shall issue transcripts and certificates to the graduates.

### **SUMMARY OF REGIONAL AND INTERNATIONAL COMPARABILITY**

It was difficult to find detailed information on military qualifications across all field to include Ammunition because of their confidentiality as military tactics varies from one country to the other. It is therefore, a challenge to find information on the modules offered and assessment methods used. This makes comparison a problem. Some of the available information is for very short term training offered to the general public, which does not sufficiently cover the military aspect of ammunition. The qualification from the South African National Defence Force (SANDF) has been used for comparison.

#### **1. SIMILARITIES**

a. **Title of Qualification, NQF Level & Credit Value or Duration:** Both qualifications are Certificate at Level 5.

b. **Main Exit Outcome(s):** Both qualifications aims to prepare learners for the storage, maintenance, repair and safe disposal of ammunition and explosives.

c. **Domains/Modules/Courses/Subjects covered:** The qualifications comprise the Fundamental modules, the Core modules and the Elective modules. There is sufficient hands on training, which build learner's competence.

## BQA NCQF QUALIFICATION TEMPLATE

d. **Assessment strategies and Weightings:** Both qualifications assessment strategies and weightings are summarised as Integrated Assessment where theoretical and practical components are assessed together.

e. **Qualification rules and minimum Standards for the award of the qualification:** To gain access to both qualifications, learners should possess Level 4 certificate. To be awarded the qualification learners should satisfy the requirements by obtaining minimum credits.

### 2. DIFFERENCES

a. **Title of Qualification, NQF Level & Credit Value or Duration:** The title for the qualification used for comparison is National Certificate: Ammunition Fitting, NQF Level 05 with a credit value of 136 while the qualification under development is Certificate in Ammunition, NCQF Level 05 with a credit value of 240.

b. **Main Exit Outcome(s):** There is little to no difference between the main exit outcomes of the two qualifications.

c. **Domains/Modules/Courses/Subjects covered:** The qualification used for comparison has 136 credits comprising of 14 Credits Fundamental, 112 Credits Core and 10 Credits Elective. The modules covered by Joint Technical Training School consists of 90 Credits of Fundamental, 140 Credits Core and 10 Credits Elective.

d. **Qualification rules and minimum Standards for the award of the qualification:** To be awarded the qualification at the SANDF a learner is required to obtain a minimum of 136 Credits. However, to be awarded the qualification in the BDF a learner should satisfy the requirements of the qualification, which is 240 Credits made of the Fundamental, Core and Elective.

#### REVIEW PERIOD

This qualification will be reviewed after 5 years upon registration.

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#### 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	