QUALIFICATION SPECIFICATION							SECTION A
QUALIFICATION DEVELOPER	Boitekanelo College						
TITLE	Diploma in Pharmacy				**NCQF LEVEL**	6	
FIELD	Health & Social Services		**SUB-FIELD**	Health Sciences			
New qualification	√	Review of existing qualification					
SUB-FRAMEWORK	General Education		TVET		Higher Education	√	
QUALIFICATION TYPE	Certificate		Diploma	√	Bachelor		
	Bachelor Honours		Master		Doctor		
CREDIT VALUE 360							

RATIONALE AND PURPOSE OF THE QUALIFICATION

Rationale

The role of the pharmacy profession has been evolving regionally and globally from being purely compounders and dispensers of medicines to a more clinical and patient focused role. The government of Botswana has embraced the concept of pharmaceutical care which was officially adopted at the beginning of National Development Plan (NDP 9). As a result, the scope of practice for pharmacists has been biased towards clinical pharmacy hence creating an increased need for pharmacy technicians to perform the technical role (Hepler & Strand, 1996).

The advent of Anti-Retroviral programmes and the Botswana government's 'Test and Treat 'initiative (National ARV programme,2016) requires an increased number of well-trained Pharmacy Technicians from the current 24 per year graduates by the only other institution offering the same qualification in the country (Institution of Health Science). According to the National AIDS Programme (2015) the number of clinics country wide is 645, and only 250 are manned by pharmacy technicians, creating a need for more Pharmacy technicians. This explains why Pharmacy Technology is listed as one of the country's' top occupations in high demand by Human Resource Development Council (HRDC) 2016. According to Boitekanelo College's needs assessment, there is need to continue training pharmacy technicians to meet this identified gap in the pharmaceutical industry. Moreover, findings from the needs assessment state that pharmacy technology graduates were more likely to be employed upon completing their studies, which further explains the high demand for this programme. This is supported by the findings from the stake holder consultative meeting where it was found that all pharmacy technology graduates from this institution were registered with BHPC and were all absorbed by the industry. The mandate of this institution is to offer industry driven solutions in response to the growing demand for healthcare professionals in Botswana and Southern Africa as a whole. From the stakeholder consultative meeting, the institution was applauded for producing highly skilled graduates necessary for job competency and competiveness by the stakeholders and preceptors.

Additional strain has been imposed on current dispensers who also double up as data capturers and logistics officers (Botswana Medicines Logistics Systems Report, 2009). The report attributes shortages of medicines to poor forecasting and procurement. Also, continued irrational use of medicines coupled with poor inventory management has led to heightened levels of expiries, hence the need to increase in the number of Pharmacy Technicians (BEDAP, 2009).

Furthermore, in 2015, Botswana spent 5.8% as a percentage of the country's GDP on healthcare (WHO, 2017). The 2017 budget speech shows P6.59 billion or 16.6% of the total ministerial current budget for the Ministry of Health and Wellness (Budget Speech 2017). This high expenditure on the sector shows the importance of providing quality healthcare services (pharmaceutical services) which normally a significant portion of it is made of pharmaceutical products.

The qualification offered by the institution at NQCF Level 6 is in line with the rest of Africa and the graduates are eligible for registration with the Botswana Health Professions Council. The qualification will create career pathways in the pharmaceutical sector, create employment and entrepreneurial opportunities for learners both in the public and private sectors.

Purpose

The purpose of this qualification is to produce graduates with knowledge, skills, and competencies to:

- implement health commodities management,
- rationally use of medicines and
- compound extemporaneous products at all levels of health care settings under the supervision of a pharmacist according to Drugs and related substances Act of 1992 and the Botswana National Drug Policy of August 2002.

ENTRY REQUIREMENTS (including access and inclusion)

- **Minimum Entry Requirements**

Minimum entry requirement for this qualification is at least NCQF Level IV or its equivalent with at least grade C in Chemistry, Biology, Physics OR minimum of BB in Double award sciences, and a minimum of grade D in English Language and grade C in Mathematics.

- **Recognition of Prior Learning/Credit Accumulation Transfer (CAT)**

Applicants who do not meet the above criterion but possess relevant industry experience may be considered using RPL and CATS policies for access.

QUALIFICATION SPECIFICATION	SECTION B
GRADUATE PROFILE (LEARNING OUTCOMES)	**ASSESSMENT CRITERIA**
1.Evaluate prescriptions, prepare and dispense medicines in appropriate dosage forms and demonstrate patient counselling skills in compliance with legal requirements, including Good Pharmacy Practice standards **Examples of related modules:** - *Pharmacology I* - *Pharmacy Practice I* - *Pharmaceutics I*	1.1.1 Apply scientific and legal knowledge to validate a prescription 1.1.2 Apply clinical knowledge to interpret a prescription 1.1.3 Interpret the prescription and prepare medicines 1.1.4 Apply psychosocial and pharmacology knowledge in patient counselling sessions 1.1.5 Communicate with patients demonstrating sensitivity to their needs and cultural diversity. 1.1.6 Dispense ARV medicines with emphasis on counselling of treatment patients to promote adherence levels. 1.1.7 Maintain relevant records in accordance with current legislative requirements 1.1.8 Refer prescriptions or patients to a pharmacist as needed.
2. Collaborate and communicate with health care professionals and the community regarding rational use of medicines, wellness and health promotion as a multi-disciplinary team member.	2.2.1 Follow the established lines of communication to facilitate supervision in the workplace. 2.2.2 Demonstrate an understanding and commitment to uphold the professional ethics in the delivery of pharmacy services to the community. 2.2.3 Explain and apply principles of supervision, time management and teambuilding in the workplace. 2.2.4 Apply principles of rational use of medicines to enforce standard treatment

	guidelines in the context of evidence-based practice. 2.2.5 Identify cases of irrational drug use and implement intervention strategies as member of a multi-disciplinary team.
3. Provide technical support in the management, acquisition, storage and distribution of medicines according to the Botswana Medicines Logistics Management System.	3.3.1 Demonstrate understanding of medicines security and the medicines logistics cycle at the central, district and facility levels of operation. 3.3.2 Track and report inventory usage using the relevant manual or electronic forms according to current SOPs. 3.3.3 Document and maintain inventory management records in accordance with applicable legislation, process documentation and SOPs 3.3.4 Dispose of expired and unwanted drugs and related pharmaceuticals according to current relevant legislation and guidelines. 3.3.5 Apply pharmaceutical warehousing principles in the storage and distribution of health commodities according to Medicines logistics guidelines.
4. Provide technical support for the extemporaneous compounding and preparation of disinfectant solutions.	4.4.1 Explain principles of cGMP and GPP in relation to manufacturing, compounding and preparation of sterile and non-sterile products. 4.4.2 Prepare and pack extemporaneous and disinfectant solutions according to relevant SOPs.

	4.4.3 Organize and prepare resources and equipment for the preparation of specific products. 4.4.4 Generate and document records for each preparation produced in accordance with legal requirements.
5. Demonstrate understanding of principles of management and prevention of common communicable and non-communicable diseases of public health importance.	3.3.1 Explain the etiology and epidemiology of common communicable and non-communicable conditions according to the National Health Policy. 3.3.2 Identify and describe socio-economic factors that contribute to poor health and wellness. 3.3.3 Provide information on preventive measures and lifestyle modification options in relation to selected conditions. 3.3.4 Provide technical support to the management of public health conditions.
6.Inculcate principles of financial management, marketing strategies and budgeting in pharmacy practice.	6.6.1 Demonstrate an understanding of management and business practices in the context of private practice. 6.6.2 Demonstrate understanding of technopreneur competencies. 6.6.3 Apply principles of budgeting and financial management
7.Demonstrate knowledge and application of pharmaceutical analyses according to QA, GMP	7.7.1 Conduct selected physical quality control tests on selected solid dosage forms 7.7.2 Conceptualize principles of pharmaceutical analyses in accordance with BP, USP and IPP standards 7.7.3 Identify and interpret pharmaceutical monographs for selected drug compounds.

QUALIFICATION STRUCTURE SECTION C			
FUNDAMENTAL COMPONENT Subjects / Units / Modules /Courses	**Title**	**Level**	**Credits**
	General Education: • Information and Communication Technology (ICT)	5	**12**
	Basic Health Sciences: • General Chemistry • Mathematics • Anatomy & Physiology I	5	**34**
	Social Sciences: • Psychology • Public health • Research	5	**39**
	Sub Total fundamental		**85**
CORE COMPONENT Subjects / Units / Modules /Courses	**Pharmaceutical Sciences:** • Pathophysiology • Pharmacology • Pharmaceutics • Pharmaceutical Chemistry • Pharmacognosy • Pharmaceutical Microbiology • Pharmaceutical Analysis • Pharmacotherapeutics	6	**153**
	Pharmaceutical Professional Practice: • Pharmacy Practice, Pharmacy Practice Practicum	6	**42**
	Experiential learning (Primary & Tertiary Hospitals) • Clinical • supply chain management • Quality Control	6	**60**
	Sub Total Core		**255**
ELECTIVE COMPONENT Subjects / Units / Modules /Courses	**Leadership, Entrepreneurship & Management:** • Students can choose two modules offered in the institution each with a maximum of 10 credits.	6	**20**

	Sub Total Elective	20

Rules of combinations, Credit distribution (where applicable):

The minimum duration required to complete this qualification is three (3) years. This qualification is worth a total of **360 credits** and comprises:

- **85 (24%)** credits Fundamental components
- **255(70%)** Core components
- **20 (6%)** elective components

ASSESSMENT AND MODERATION ARRANGEMENTS

Assessment Arrangements

Program assessment is through written Assignments, Tests, Exam, and Industrial Attachment (Work Integrated Learning).
Contribution of the final marks is **40% formative** and **60% summative** assessments.

Moderation Arrangements

The following shall apply for both internal and external moderation.

Internal moderation requirements and External moderation requirements shall be carried out in accordance with BQA requirements.

RECOGNITION OF PRIOR LEARNING (if applicable)

Candidates may submit evidence of prior learning and current competence and/or undergo appropriate forms of Recognition of Prior Learning (RPL) assessment for the award of credits towards the qualification in accordance with applicable College RPL policies and relevant national-level policy and legislative framework.

Implementation of RPL shall also be consistent with requirements, if any, prescribed for the field or sub-field of study by relevant national, regional or international professional bodies.

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

Horizontal Articulation (related qualifications of similar level that graduates may consider)

This qualification articulates horizontally with any diploma in the health sciences group at NCQF 6 especially pharmaceutical sciences. Other institutional and departmental requirements may apply.

Vertical Articulation (qualifications to which the holder may progress to)

This qualification articulates vertically with any health sciences bachelor's degree at NCQF level 7 or professional Bachelor's Degree at NCQF level 8 (e.g., Bachelor of Pharmacy, Bachelor of Pharmaceutical Sciences, Pharmacology). Other institutional requirements may apply.

Graduates of the Diploma in Pharmacy Technology at the institution can secure posts in clinics, medical centers, hospitals, medical stores, pharmaceutical companies, teaching colleges/universities, quality control laboratories, drug regulatory units and community pharmacies.

QUALIFICATION AWARD AND CERTIFICATION

Minimum standards of achievement for the award of the qualification
Candidates must meet the minimum standards to be awarded the qualification.

Certification
Candidates meeting prescribed requirements will be awarded the Diploma in Pharmacy qualification in accordance with standards prescribed for the award of the qualification and applicable policies, including 360 credits comprising of coursework, research proposal and work-based learning. The minimum duration required to complete this qualification is three (3) years.

EMPLOYMENT PATHWAYS

Graduates will have requisite competencies and attributes to work as:

A pharmacy technician is a generalist who can operate in the four categories of pharmacy (community, clinical (private or public), institutional (private or public), manufacturing and wholesale). While the pharmacy technician works under the direct personal supervision of a pharmacist in a pharmacy, they may also work in a primary health care clinic, or any other facility approved under the indirect personal supervision of a pharmacist.

REGIONAL AND INTERNATIONAL COMPARABILITY

This qualification compares with the following:

National Health Training College in Lesotho offers a three-year Pharmacy Technology Programme and at the time of benchmarking, programme credits had not been converted into NCQF format. The programme is comparable with respect to core and fundamental courses. The attachment areas and duration is similar as well. Their graduates articulate into the National University of Lesotho Bachelor of Pharmacy programme at level 2 of the 5 year long course.

The **Institute of Health Sciences** in Gaborone (Botswana) offers a higher national diploma in pharmacy over a 3-year period. At the time of benchmarking, programme credits had not been converted into NQF format. The programme is comparable to us with respect to core and fundamental courses. The attachment areas and duration is relatively the same as BC as well.

The **Nelson Mandela Metropolitan University** (South Africa) offers a **255-credit** pharmacy diploma programme. The programme equips the learner with the knowledge and skills required by Pharmacy Support Personnel (PSP) at the level of a pharmacy technician at **NQF 6.** The institution offers the programme over a 2-year period with competencies to provide technical support for the compounding,

manipulation and preparation of sterile and non-sterile medicines and scheduled substances in compliance with standards as described in cGMP and GPP and to demonstrate understanding of principles of nutraceuticals.

The **Catholic University of Health and Allied Sciences** and the Muhimbili University of Health and Allied Sciences (Tanzania) offer the Diploma in Pharmaceutical Sciences. The former institution offers it over a period of 3 years. However, there is a paucity on the programme structure and course outline.

Harare Polytechnic offers the Pharmacy Technician course of the US based Livingston Parish Literacy & technology center. The course is designed to prepare the students for entry level positions as a pharmacy technician. Emphasis is placed skill development in assisting the pharmacist to record and maintain records, label medications, perform computer patient billing, perform stock inventory and order supplies.

The **University of Namibia** offers a diploma in pharmacy the duration of which is 3 years. Holders of this qualification are able to effectively manage medicines inventory in a pharmacy setting, implement the basic concepts of primary health care related to pharmacy and organize and conduct activities in quality analysis and pharmaceutical sciences.

Other qualifications offered in countries such as Ireland which generally emphasize development of competencies in stock control, interpersonal skills, work ethics and drug classification and interaction.

Although the qualifications examined generally follow similar structures and standards, there are differences, though not significant, in that most institution offers their diploma over a 2-year period. Also significant is that most institutions offer their attachment over the duration of the whole programme while we offer the main attachment at the second last semester of the programme.

As noted above, this qualification generally compares well with all the qualifications studied in the 3 main institutions reviewed, since the exit outcomes cover similar scope and depth and are aligned to exit-level descriptors typical of this level and type of qualification as done within the region and beyond as well as competencies required for registration and accreditation with professional bodies such as Pharmacy councils (BHPC and SAPC). However, what sets it apart from the qualifications examined, is that there is provision for development of attributes such as primary care clinical dispensing which is critical for primary care practice.

REVIEW PERIOD

The qualification will be reviewed every five (5) years.