SECTION A							
QUALIFICATION DEVELOPER	**GABORONE UNIVERSITY COLLEGE OF LAW AND PROFESSIONAL STUDIES**						
TITLE	**CERTIFICATE V IN CARPENTRY AND JOINERY**				**NCQF LEVEL**	**5**	
FIELD	**PHYSICAL PLANNING AND BUILDING**		**SUB-FIELD**		**CARPENTRY AND JOINERY**		
New qualification	✓		Review of existing qualification				
SUB-FRAMEWORK	General Education		TVET	✓	Higher Education		
QUALIFICATION TYPE	Certificate	✓	Diploma		Bachelor		
	Bachelor Honours		Master		Doctor		
CREDIT VALUE					**131**		

RATIONALE AND PURPOSE OF THE QUALIFICATION

RATIONLE

Carpentry and Joinery is a broad skills area designed for planning, designing, constructing and maintaining timber made structures such as roofs, furniture and wood made buildings of all types. The qualification proposed here therefore aims at producing technical artisans who have a solid grounding in the basic technical and vocational knowledge based and practical competencies. The qualification brings together the technological problem-solving ability of artisans and the organisational, administrative, and planning abilities of management to execute the operational performance of complex carpentry and joinery projects.

Human Resource Development Council (HRDC) is the main authority in Botswana for determining priority skills needed by the economy for now and for the future. They do this in close collaboration with respective industries, both public and private sector, and there is no better authority than HRDC to guide qualifications and programmes development to address needs of the economy. In their (HRDC) December 2016 document titled **"Top Occupations in High Demand"** and their subsequent March 2019 document titled **"Priority Skills (Current and Future)"** it is clear that construction related skill, which include carpentry

and joinery are in high demand and will continue to be required for the foreseeable future, or at least up to the year 2028. Specialised areas under Carpentry and Joinery include “Carpentry Specialists, Specialists in Joinery and Timber Frame Specialists”.

PURPOSE

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

- Construct the various types of wood joint, fixing devices used in carpentry and joinery and construct framed box carcases.
- Carryout drilling operations and machine mortises using boring equipment, sanding and final shaping operations using finishing equipment.
- Identify and use various methods of timber seasoning, timber storage and, the different types of manufactured timber.
- Demonstrate knowledge of communication, IT and entrepreneurial skills in the carpentry and joinery environment.

The purpose of this qualification is to produce skilled and self-reliant artisans that can execute and coordinate carpentry and joinery work in a workshop or as part of a construction project.

ENTRY REQUIREMENTS (including access and inclusion)

Entry requirements:

i. A minimum entry of NCQF Level IV or equivalent with Grade C or better.

ii. Recognition of Prior Learning (RPL) and Credit Accumulation and Transfer (CAT) will be considered for access and inclusion of prospective candidates.

QUALIFICATION SPECIFICATION: SECTION B	
GRADUATE PROFILE (LEARNING OUTCOMES)	**ASSESSMENT CRITERIA**
1. Demonstrate knowledge of communication, IT and entrepreneurial skills in the carpentry and joinery environment.	1.1 Apply written, verbal and non-verbal aspects of communication within the welding and fabrication industry. 1.2 Use technology to produce reports and communicate accordingly within the welding and fabrication industry. 1.3 Interpret information effectively to implement instruction in the welding and fabrication industry. 1.4 Prepare formal and informal business communiqués.

	1.5 Plan and conduct appointments with clients.
2. Demonstrate knowledge of identifying the various methods of timber seasoning, timber storage and the different types of manufactured timber.	2.1 Demonstrate knowledge and understanding various types of Botswana /Southern Africa timbers and their characteristics and uses. 2.2 Identify wood defects and their causes during inspection. 2.3 Cut different sizes of timber using a variety of equipment and Machinery such as a band saw. 2.4 Apply procedures involved in processing manufactured boards and laminated plastics. 2.5 Apply different finishes on timber surfaces such as paint and vanish. 2.6 Determine precautions to be taken to reduce the effect of defects in painting.
3. Demonstrate understanding of visualizing objects in space, their interactions and disposition for better mastery of technical drawings.	3.1 Demonstrate an understanding of basic terminology in graphics. 3.2 Interpret different scales used in technical drawing. 3.3 Apply free hand drawing techniques and perspective drawing intersections. 3.4 Draw in three dimension and two dimensions. 3.5 Apply, orthogonal, axonometric, and Isometric projections to 3D and 2D diagrams.
4. Apply the basic requirement for the construction, erection, and dismantling of form work.	4.1 Demonstrate knowledge on concrete technology including in situ concrete and precast concrete. 4.2 Perform formwork construction for the following in-situ concrete items: beam (b) floor and roof slab (c) lintel (d) wall (e) concrete straight flight stair and landing (f) site concrete (German floor) (g) column - square, circular and shape (k) tapered footing/foundation base and (j) balconies. 4.3 Adhere to all requirements for the construction, erection and dismantling of forms on site. 4.4 Demonstrate the use of scaffolding to support form work panels and boards. 4.5 Construct step and ladder in timbers elect and use suitable timbers for form work. 4.6 Adopt Current safety regulations in the use of ladders and steps.
5. Carryout drilling operations and machine mortises using	5.1 Demonstrate knowledge of using hand tools to work on unfinished and finished timber members.

boring equipment, sanding and final shaping operations using finishing equipment.	5.2 Adopt the procedures involved in maintaining hand tools. 5.3 Select, assemble and install joinery items for specific purpose. 5.4 Perform maintenance operations involving sharpening of hand planes and chisels grinds the plane iron without burning. 5.5 Carryout rip and cross-cut operations on timber. 5.6 Demonstrate understanding if using wood working machines efficiently. 5.7 Carry out routine service and maintenance operations on the machinery
6. Apply various methods and techniques of floor/platform construction and finishing.	6.1 Provide floor/platform for construction and finishing. 6.2 Construct and erect partitions and screens for various purposes to given specifications. 6.3 Design parts associated with roof/ceiling construction span (b) pitch (c) rafters (d) strut (e) tie beam (f) rise (g) ridge (h) wall plate (i) eaves (j)fascia board (k) purlins (l) ceiling joist (m) barge board. 6.4 Design and detail timber or wooden window frames. 6.5 Demonstrate knowledge in common types of windows used.
7. Construct the various types of wood joint, fixing devices used in carpentry and joinery and construct framed box carcases.	7.1 Apply the procedures involved in preparing timber flat squares and the basic requirements of a good joints. 7.2 State the basic requirements of various types of wood joints. 7.3 Uses fix devices and materials such as nails and screws. 7.4 State the functions of the various fixing devices. 7.5 Construct doors and frames. 7.6 Construct framed and boxed carcasses. 7.7 Apply principles of framing joints in the construction of framed carcass construction. 7.8 Construct plinths, drawers & shelving joints.
8. Demonstrate understating of the components of a building, the construction and integration of construction members in the context of carpentry and joinery.	8.1 Demonstrate knowledge of the sub-structure including construction and erection application of finishes, structural requirements and uses. 8.2 Demonstrate knowledge in flat concrete and timber-roof construction details and coverings. 8.3 Apply construction methods and details of timber, steel, and concrete staircases.

	8.4 Identify and evaluate types uses and application of in-situ tile/block/slab and sheet finishing. 8.5 Observe and evaluate criteria for selection of finishes.

QUALIFICATION STRUCTURE: SECTION C			
FUNDAMENTAL COMPONENT Subjects / Units / Modules /Courses	**Title**	**Level**	**Credits**
	Information and Communication Technology Skills	5	12
	Technical Drawing	5	15
	Entrepreneurial Skills	5	12
CORE COMPONENT Subjects / Units / Modules /Courses	Joinery and Wood Processing	5	20
	Form Work	5	15
	Woodwork Hand Tools and Powered Machines	5	15
	Framing Work	5	15
	Introduction to Building Construction	5	15
	Health, Safety and Occupation	5	12
ELECTIVE COMPONENT Subjects / Units / Modules /Courses			
	Total	5	131

Rules of combinations, Credit distribution:

All modules at level 5.

FUNDAMENTAL COMPONENT- 39 credits

CORE COMPONENT- 92 credits

Total - 131 credits

ASSESSMENT AND MODERATION ARRANGEMENTS

Assessment

Assessment shall be conducted by BQA accredited assessors.

The assessment for this qualification shall comprise of both formative and summary assessments weighted according to institutional guidelines and policies. Both formative and summative assessment processes are accounted for to monitor progress during the qualification and to determine competence of the learners at the end of the qualification.

The formative assessment shall contribute 60%.

Summative assessment shall make up the remaining 40%.

Moderation

Moderation shall be conducted by BQA accredited moderators.

RECOGNITION OF PRIOR LEARNING

There will be provision of RPL for award of the qualification using ETP RPL Policy in line with the National RPL Policy.

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

This qualification articulates **vertically** with:

- Diploma: Construction Engineering (NCQF Level 6)
- Diploma: Civil Engineering (NCQF Level 6)

Horizontally the learners pursuing this qualification may consider:

- Certificate V in Real Estate Management (NCQF Level 5)
- Certificate V in Project Management (NCQF Level 5)
- Certificate V in Building Construction (NCQF Level 5)

Employment Pathways

Upon successful completion the qualification the graduate can be absorbed in the following disciplines at entry level

- Carpenter
- Site Foreman
- Cabinet Maker
- Furniture Maker
- Home Improvement Installer
- Joiner

- Carpentry and Joinery Business Owner
- Wood Machinist
- Wood Turner

QUALIFICATION AWARD AND CERTIFICATION

Upon successful completion the candidate will be awarded a qualification of Certificate V in Carpentry and Joinery (NCQF Level 5). A candidate is considered successful when they have achieved the stipulated 131 credits.

The graduate will be issued a transcript and a certificate.

REGIONAL AND INTERNATIONAL COMPARABILITY

To establish comparability, benchmarking was conducted on 2 identified similar qualifications internationally. Regionally, there was no qualification to benchmark against at an equivalent level. It was noted that SAQA has **National Certificate in Construction Carpentry** at NQF level 3(equivalent to NCQF level 2), therefore, the Developer could not compare with it. However, the Developer benchmarked against it mainly because of its exit main outcomes. The benchmarking was looking at title of the qualification, entry requirements, credits allocation, NQF level at country of origin and either exit level outcomes or modules.

Chisholm Institute (Australia) Certificate III in Joinery

NQF level and credits are not indicated. The qualification is apprenticeship. However, the modules provided are similar to those of the proposed qualification. Such modules center around the core of carpentry and joinery the subfield of building construction; roofing, measurements, carpentry tools and equipment, erect and dismantle formwork for footings and slabs on ground, construct wall frames, apply OHS requirements, policies and procedures in the construction industry, handle carpentry materials and many others.

Intec College (South Africa) Certificate in Carpentry and Joinery

There is nothing much on this qualification to compare with except that it has modules such as Intro and advanced carpentry & joinery, Timber, Shop and mill equipment and Stair building and Joinery which are similar to those of the proposed qualification.

REVIEW PERIOD

The qualification will be reviewed every 5 years.