SECTION A:	QUALIFICATION DETAILS																	
QUALIFICATION DEVELOPER (S)	University of Botswana																	
TITLE	Master of Philosophy in Design and Technology Education													NCQF LEVEL	9			
STRANDS (where applicable)	1. N/A 2. 3. 4.																	
FIELD	Education and Training		SUB-FIELD	Training										CREDIT VALUE	240			
New Qualification														Legacy Qualification	X			
SUB-FRAMEWORK	General Education				TVET									Higher Education	X			
QUALIFICATION TYPE	Certificate	I		II		III		IV		V		Diploma		Bachelor				
	Bachelor Honours			Post Graduate Certificate								Post Graduate Diploma						
	Masters		X	Doctorate/ PhD														

RATIONALE AND PURPOSE OF THE QUALIFICATION

RATIONALE:

The qualification has been designed to respond to Botswana's social and economic needs and that of the region, especially in areas of design and technology. It is aligned with the key strategic sectors of education and training, which requires a highly trained workforce that will transform Botswana into a knowledge-based and circular economy. Botswana needs qualified and certified higher education human resources to help drive the nation by providing an adequate supply of human resources that the country needs for a knowledge-based economy. Teachers must be well equipped with pedagogical knowledge that would enable them to teach learners to be useful in society and contribute to the economy of the country. As Botswana aspires to be a

knowledge-based society, the issue of making sure that teachers are trained in the principles and practices of education and manufacturing comes into play. Prioritisation of occupations in demand is informed by national priorities outlined in Vision 2036, National Development Plan (NDP 11), and the long-term strategies of the different sectors of the economy. The development of human capital is essential in achieving the main pillars of Vision 2036, such as Pillar 1: Sustainable Economic Development and Pillar 2: Human and Social Development. These two pillars reiterate the need for Botswana to transform into a knowledge-based economy, thereby producing a globally competitive human resource base as a vehicle for driving economic growth and diversification (HRDC, 2016). A Master of Philosophy in Design and Technology Education would contribute to the realisation of this vision. Higher education is at the forefront of knowledge production in any modern society; it is, therefore, necessary to have human resources trained in pedagogy so as to equip them with the knowledge, skills and competencies needed for educating learners that would contribute to the social, economic, and political development of the country. The qualification contributes towards the strategic role of meeting the country's development needs through advancing human resource development and developing research and innovation capacity (HRDC Priority Skills 2023/4, 2023; Towards a Knowledge Society, Tertiary Education Policy, 2010; National Human Resource Development Plan, 2009-2022; Education and Training Sector Strategic Plan, 2015; Vision 2036, 2016).

PURPOSE: (itemise exit level outcomes)

The purpose of the qualification is to equip graduates with advanced knowledge, skills, and competences to:

- Propose, design, and conduct research and inquiry to improve practice and promote equity in design and technology education.
- Make advanced contribution to knowledge in design and technology education practice.
- Undertake advanced scholarly research of international standard to critical analyse, evaluate, and synthesise new and complex design and technology education areas to solve problems.
- Publish research work in renown peer-reviewed outlets and present work at conferences in design and technology education and prepare grant proposals.
- Demonstrate strategic leadership, and professional academic integrity in adherence to personal and professional ethics appropriate to design and technology education.
- Exercise a high-level of authority in the application of research findings to improve professional practice in design and technology education.

MINIMUM ENTRY REQUIREMENTS (including access and inclusion)

The standard requirements for entrance to the Master of Philosophy degree qualification shall be:

• Bachelor's degree, NCQF Level 7 and/or 8.

• Recognition of Prior Learning (RPL) and Credit Accumulation and Transfer (CAT) shall be considered according to the policies for access aligned with BQA/National policies.

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SECTION B	***QUALIFICATION SPECIFICATION***
GRADUATE PROFILE (LEARNING OUTCOMES)	***ASSESSMENT CRITERIA***
Demonstrate advanced knowledge and understanding in the core knowledge areas of Design and Technology (learning theories, design theories, technology and its applications in education and learning).	• Guide learners to complete a research paper as part of a module requirement. • Publish manuscripts in peer-reviewed journals. • Present papers at academic conferences, seminars & workshops. • Source and access current design and technology applications and best practices relating to education and learning.
Analyse the literature and identify key areas of research (gaps) in Design and Technology Education.	• Guide learners to develop a comprehensive research proposal. • Publish manuscripts in peer-reviewed journals. • Present papers at academic conferences, seminars & workshops. • Identify and clearly articulate the key research gaps in Design and Technology Education. • Assess whether the identified research gaps have the potential to address significant issues or challenges in the field.
Demonstrate advanced critical thinking skills and the ability to apply research findings to real-world problems in the field of Design and Technology Education.	• Guide learners to develop a comprehensive research proposal. • Publish manuscripts in peer-reviewed journals. • Present papers at academic conferences, seminars & workshops. • Formulate appropriate research questions. • identify and apply methodologies needed to address them. • Develop innovative solutions, interventions, or strategies to address challenges in teaching, learning, or curriculum development.

Apply knowledge and methodologies to create new knowledge in response to posed research questions and expand knowledge development.	• Guide learners to create new knowledge, products and services that solve challenges in society. • Publish manuscripts in peer-reviewed journals. • Present papers at academic conferences, seminars & workshops. • Conduct comprehensive literature review to identify gaps that are significant for further research investigations. • Apply theory and advanced research methodologies to contribute to knowledge development in Design and Technology. • Demonstrate the ability to develop original ideas to design and analyse intricate solutions in Design and Technology. • Statistically analyse high quality research data and validate the research data. • Apply acquired knowledge independently by determining the learning and research requirements, source of information and critically analyse assumptions and embrace new knowledge.
Demonstrate strong written and oral communication skills.	• Publish manuscripts in peer-reviewed journals. • Present papers at academic conferences, seminars & workshops. • Publish technical reports. • Convey ideas clearly and effectively through both written and oral communication, maintaining a coherent flow of information to the intended audience.
Communicate professionally to experts, practitioners, and non-professionals.	• Publish manuscripts in peer-reviewed journals. • Generate scientific outputs and reports in journals and present papers at academic conferences, seminars & workshops. • Publish technical reports.

	• Produce and defend research findings using appropriate structure, style, and language.
Provide leadership resulting in the extension of professional and theoretical knowledge base.	• Demonstrate leadership skills and the ability to collaborate with other researchers, educators, and stakeholders in the field of Design and Technology Education. • Conduct research projects, organising conferences or workshops, or working with industry partners to bridge the gap between academia and practice. • Invitation to key stakeholder's engagements (conferences, seminars, workshops, policy forums, etc.). • Serve in corporate boards. • Serve in national task forces or technical committees.
Demonstrate advanced knowledge and understanding of professional standards of ethics and conduct.	• Conduct research ethically and according to educational policies and standards in the field of Design and Technology Education. • Apply for research permits in relevant Ministries. • Acknowledging other sources in own research work. • Engage and secure membership with professional organisations, conferences, and networks in the field of Design and Technology Education.
Demonstrate advanced knowledge and understanding to teach university-level modules in the areas of specialisation.	• Develop modules as per the requirements of national and international accreditation bodies. • Facilitate assigned university modules. • Assess learners taught in each assigned module. • Evaluate modules taught through students' assessments.

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SECTION C	***QUALIFICATION STRUCTURE***				
COMPONENT	***TITLE***	***Credits Per Relevant NCQF Level***			***Total Credits***
		Level [8]	***Level [9]***	***Level [10]***	
FUNDAMENTAL COMPONENT *Subjects/ Courses/ Modules/Units*	Research methods		30		
CORE COMPONENT *Subjects/Courses/ Modules/Units*	Research proposal		60		
	Journal Articles		30		
	Thesis		120		

STRANDS/ SPECIALIZATION	*Subjects/ Courses/ Modules/Units*	***Credits Per Relevant NCQF Level***			***Total Credits***
		Level [ ]	***Level [ ]***	***Level [ ]***	
1.					
2.					

SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL	
TOTAL CREDITS PER NCQF LEVEL	
NCQF Level	***Credit Value***
9	240
TOTAL CREDITS	**240**

Rules of Combination:

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

A candidate will obtain the qualification by:

(i) Completing the fundamental coursework (research methods module - 30 credits) and Core coursework (research proposal - 60 credits and a thesis - 120 credits).

(ii) Publishing at least one (1) journal articles in reputable journals recognised by the university (30 credits).

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ASSESSMENT ARRANGEMENTS

All assessments, formative and summative, leading/contributing to the award of credits or qualifications should be based on learning outcomes and/or sub-outcomes.

Formative assessment

Formative assessment (proposal defence) will contribute 50% towards the award of the final standing.

Summative assessment

Summative assessment will contribute 50% to the final standing.

MODERATION ARRANGEMENTS

The qualification shall have an internal and external examiner following applicable policies and regulations for quality assurance to ensure fairness, validity, reliability, and consistency of assessments. The examiners shall be registered and accredited by the Botswana Qualifications Authority and/or equivalent accreditation board.

RECOGNITION OF PRIOR LEARNING

Learners may submit evidence of prior learning and current competence and/or undergo appropriate forms of RPL assessment for the award of credits towards the qualification in accordance with applicable RPL policy, credit accumulation and transfer system and relevant national-level policy and legislative framework.

CREDIT ACCUMULATION AND TRANSFER

Learners may submit evidence of prior learning and current competence and/or undergo appropriate forms of RPL assessment for the award of credits towards the qualification in accordance with applicable RPL policy, credit accumulation and transfer system and relevant national-level policy and legislative framework.

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

Horizontal Articulation (related qualifications of a similar level (NCQF Level 10) that graduates may progress to):

- Master of Philosophy in Design & Technology Education
- Master of Philosophy in Education

- Master of Philosophy in Design
- Master of Philosophy in Creative Education
- Master of Philosophy in Technology Education
- Master of Philosophy in Project Management
- Master of Philosophy in Science & Technology Studies

Vertical Articulation (NCQF Level 10) qualifications to which the holder may progress to:

Candidates can proceed to do:

- Doctor of Philosophy in Design & Technology Education
- Doctor of Philosophy in Education
- Doctor of Philosophy in Creative Education
- Doctor of Philosophy in Technology Education
- Doctor of Philosophy in Project Management
- Doctor of Philosophy in Science & Technology Studies

Employment

- Researchers
- Design and Technology Educators
- Consultants
- Design and Technology Policymakers
- Design and Technology Education Administrative Officers

QUALIFICATION AWARD AND CERTIFICATION

Minimum standards of achievement for the award of the qualification

To be awarded a Master of Philosophy in Design & Technology Education, a learner should have satisfied all exit learning outcomes and met the minimum credit requirements (240 credits), fundamental and core components as indicated in the qualification structure.

Certification

For a leaner to be awarded a Master of Philosophy in Design & Technology Education, qualification, he/she should have achieved a minimum of 240 credits. After satisfying all the requirements, a learner will be awarded a Master of Philosophy in Design & Technology Education certificate.

SUMMARY OF REGIONAL AND INTERNATIONAL COMPARABILITY

A comparability of the current qualifications was conducted against regional qualifications at the University of Cambridge (https://www.postgraduate.study.cam.ac.uk/courses/directory/ededmpeac) and internationally at Auckland University of Technology, New Zealand (https://www.educations.com/study-abroad/aut-university/master-of-philosophy-in-education-1003901) and University of London, UK (https://www.gold.ac.uk/pg/mphil-phd-design/).

There is no university in the region which offers MPhil in Design & Technology Education or Technology Education.

The duration of the MPhil in Design and Technology Education qualification from the benchmarked qualifications ranges from 1 year full-time and 2-3 years part-time study. The NCQF levels differ as in the UK, the qualification is at Level 8, and New Zealand are at Level 9. The latter is comparable to this qualification because MPhil qualifications are at Level 9. However, the credits for the benchmarked qualifications were not stated in some universities.

The entry requirements for an MPhil qualification are similar to the benchmarked qualifications, as one needs to possess a minimum of a bachelor's degree (Hons) or master's degree in the relevant field.

The learning domains for MPhil qualifications are similar in knowledge, skills, and competencies.

The exit learning outcomes of this qualification compare well with those of the benchmarked qualifications.

The modules are comparable as there is a taught module in the foundation year on research methodologies and other professional development activities such as conducting seminars. All qualifications require learners to conduct research and publications.

The assessment strategies in all the qualifications include submitting an original research thesis, completing coursework and a MPhil defense. An MPhil is awarded to a learner who produces substantial research that contributes to knowledge in the field of study.

Employment pathways include academic leadership positions, educator, consultant, research and entrepreneurship, research and development, leadership in cultural and creative sectors, etc.

The Master of Philosophy in Design & Technology qualification aligns well with qualifications offered in the UK, and New Zealand. Therefore, the qualification provides for the international mobility of graduates. It prepares graduates for research and teaching careers in higher education, government and research institutes, and industry, especially in research, development, and innovation.

REVIEW PERIOD

The qualification will be reviewed every five years.

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