

	BQA NCQF QUALIFICATION TEMPLATE	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

SECTION A: QUALIFICATION DETAILS														
QUALIFICATION DEVELOPER (S)		University of Botswana												
TITLE	Doctor of Philosophy (Environmental Science)										NCQF LEVEL	10		
FIELD	Agriculture and Nature Conservation			SUB-FIELD		Environmental Science				CREDIT VALUE	360			
New Qualification						X		Review of Existing Qualification						
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							Doctorate/ PhD			X			
RATIONALE AND PURPOSE OF THE QUALIFICATION														
<p>RATIONALE:</p> <p>Doctoral degrees in various aspects of environmental science in the country, the Southern African sub-region, Africa and throughout the world are still in great demand as environmental issues are expanding in importance.</p> <p>Postgraduate programmes produce scientists at the highest academic level with the ability to provide leadership in both academic and professional fields in environmental management essential to capacity building at both the national and regional level. Innovative leadership is essential to integrate the UN's sustainability agenda into strategic plans and operational activities. Pillar 3 of Vision 2036 emphasizes the need to optimally manage Botswana's natural resources in such a way that they continue to sustain the livelihoods of Botswana. The programmes also aim to produce scientists whose competencies are recognized locally, regionally, and internationally.</p>														

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PURPOSE:

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

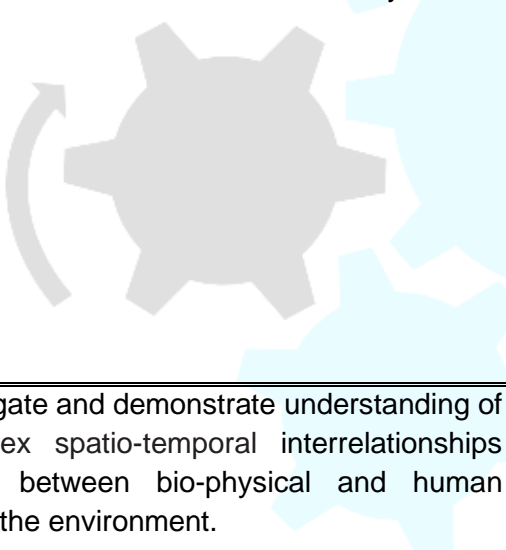
- Integrate biophysical and socio-economic environmental processes and issues.
- Independently undertake advanced research in the field of environmental science.
- Provide leadership in environmental sustainability and management.

ENTRY REQUIREMENTS (including access and inclusion)

The entrance requirements to Doctor of Philosophy (Environmental Science) degree shall be:

- NCQF Level 9.
- Recognition of Prior Learning (RPL) will be considered according to institutional and RPL policies.

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SECTION B		QUALIFICATION SPECIFICATION	
GRADUATE OUTCOMES)	PROFILE (LEARNING	ASSESSMENT CRITERIA	
1.1 Conduct original and high-quality research that contributes to environmental sustainability.		1.1.1	Identify researchable environmental problem.
		1.1.2	Prepare a relevant research proposal.
		1.1.3	Appraise and evaluate literature.
		1.1.4	Collect and analyze data.
		1.1.5	Write and present research findings in different fora.
		1.1.6	Make recommendations based on research findings.
		1.1.7	Write peer reviewed and publishable papers in high impact journals (required).
		1.1.8	Participate in research networks.
1.2 Investigate and demonstrate understanding of the complex spatio-temporal interrelationships that exist between bio-physical and human aspects of the environment.		1.2.1	Apply integrated environmental approaches and frameworks to analyze interactions between human and bio-physical processes.
		1.2.2	Use appropriate tools to analyze interactions between human and bio-physical processes at different spatial and temporal scales.
1.3 Contribute to environmental sustainability and achievement of the UN's sustainability agenda.		1.3.1	Coordinate and initiate environmental research projects.
		1.3.2	Design policy briefs that link the research findings to environmental sustainability.
		1.3.3	Disseminate research results through appropriate and accessible forums.

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SECTION C	QUALIFICATION STRUCTURE				
COMPONENT	TITLE	Credits Per Relevant NCQF Level			Total (Per Subject/ Course/ Module/ Units)
		Level [10]	Level []	Level []	
FUNDAMENTAL COMPONENT Subjects/ Courses/ Modules/Units	Research Proposal	110			110
CORE COMPONENT Subjects/Courses/ Modules/Units	PhD thesis	250			250
ELECTIVE/ OPTIONAL COMPONENT Subjects/Courses/ Modules/Units					

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SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL	
TOTAL CREDITS PER NCQF LEVEL	
NCQF Level	Credit Value
Level 10	360
TOTAL CREDITS	360
Rules of Combination: (Please Indicate combinations for the different constituent components of the qualification)	
<p>To complete this qualification a learner shall accumulate a total of 360 credits divided as follows:</p> <ul style="list-style-type: none"> Fundamental course (Research proposal) worth 110 credits. Core course (Thesis) worth 250 credits. 	

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ASSESSMENT ARRANGEMENTS

Formative: Research proposal defense.

Summative: Thesis examination (including publication of at least one peer reviewed journal article and successful oral defense).

MODERATION ARRANGEMENTS

Internal and external moderation of the thesis and oral defense will be conducted. The moderation will be done by registered and accredited assessors and moderators.

RECOGNITION OF PRIOR LEARNING

Recognition of Prior learning (RPL) for the award of this qualification will be in line with the Institutional and National policies.

CREDIT ACCUMULATION AND TRANSFER

Credit Accumulation Transfer (CAT) for the award of this qualification will be in line with the Institutional and National policies.

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

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

- PhD (Geography)
- PhD (Environmental Management)

Employment pathways: These include:

- Environmental Conservationists
- Hydrologists
- Urban Planners
- Cartographers
- Environmental Resource Managers
- Environmental Impacts Assessors

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QUALIFICATION AWARD AND CERTIFICATION

The Doctor of Philosophy (Environmental Science) degree shall be awarded to a candidate after accumulating a total of 360 credits and approval by the Senate. The institution shall issue a certificate bearing the Qualification title as registered on the NCQF.

REGIONAL AND INTERNATIONAL COMPARABILITY

The Doctor of Philosophy (Environmental Science) at the University of Botswana was benchmarked against the following programmes:

- PhD (Environmental Management), University of Pretoria, South Africa (<https://www.up.ac.za/yearbooks/2019/pdf/programme/02261042>)
- PhD (Geography), Kansas State University, United States (<https://catalog.k-state.edu>)
- PhD (Environmental Science), University of Queensland, Australia (https://my.uq.edu.au/programs-courses/program.html?acad_prog=7501).

SIMILARITIES AND DIFFERENCES of PhD programmes

Similarities

- The PhD degree is carried out through supervised research.
- The student defends the research proposal before embarking on the research (University of Queensland, Botswana, and Pretoria).
- The PhD dissertation is examined by an appointed committee that includes internal and external examiner(s).
- Oral examination of the PhD dissertation is mandatory (University of Pretoria and Kansas State University).

Differences

- Full time doctoral students at Kansas State University are required to take preliminary examination within three years of entry into the doctoral programme, after which the student advances to PhD candidacy for the degree upon satisfactory performance.
- The appointment of examination committee varies from university to university. At Queensland University the thesis is examined by two external examiners, with one of the examiners coming from outside Australia. At the University of Pretoria one of the external examiners must come from outside

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South Africa while at Kansas State University, the Dean of the Graduate School appoints an examination committee which consists of the supervisory committee and an additional member of the graduate faculty who is not a member of supervisory committee. The additional member would also serve as an outsider chair of the oral examination.

Students are not required to have published a journal article before completion of study at both the Queensland University and Kansas State University. However, at the University of Pretoria the submitted thesis must be accompanied by proof of submission of an article at an accredited journal.

- Oral examination is less common at Queensland University.

REVIEW PERIOD

Programme reviews for the department will be done every 5 years.