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

SECTION A: QUALIFICATION DETAILS													
QUALIFICATION DEVELOPER (S)		Construction Industry Trust Fund											
TITLE	Certificate III in Site Surveying										NCQF LEVEL	3	
FIELD	Physical Planning and Construction			SUB-FIELD		Physical Planning				CREDIT VALUE	42		
New Qualification						✓		Review of Existing Qualification					
SUB-FRAMEWORK		General Education					TVET			✓		Higher Education	
QUALIFICATION TYPE	Certificate	I	II	III	✓	IV	V		Diploma		Bachelor		
	Bachelor Honours			Post Graduate Certificate				Post Graduate Diploma					
	Masters					Doctorate/ PhD							
RATIONALE AND PURPOSE OF THE QUALIFICATION													
<p>Rationale</p> <p>Government has identified high unemployment and poverty amongst youth as a national security risk, hence the need to train this section of the population in productive and income generating skills.</p> <p>Despite the country continuing to receive investments, these investments are biased towards capital intensive ventures. This situation has the inherent risk of unemployment continuing to surge, and the government, through its vital development policy paper, National Development Plan 11 (NDP 11), has identified areas of potential high employment uptake such as services, and manufacturing and has made a commitment to give these sectors extensive support with a view of making a meaningful contribution to the growth of the economy.</p> <p>Another policy document that make mention of skills development as a vehicle towards inclusivity and provision of opportunities for all, is the Vision 2036 document under the Human and Social Development (Pillar 2) which states that “Botswana society will be knowledgeable with relevant quality education that is outcome based, with emphasis on technical and vocational skills as well as academic competencies.”</p>													

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This qualification provides qualifying learners with the underlying Site Surveying knowledge, skills and values in order to become competent practitioners of the Construction Industry; be employed or self-employed within the industry and pursue further learning in specific areas of Civil Engineering.

PURPOSE:

The purpose of this qualification is to equip learners with broad technical knowledge, cognitive and practical skills, and competencies to:

- Read and interpret building drawings to execute surveying operations.
- Apply principles of site surveying.
- Set out of building structures.
- Use various types of surveying equipment.
- Use modern technology survey equipment.
- Collect, Interpret and use given data to determine correct levels.
- Communicate with all stakeholders in the building and construction sector.

ENTRY REQUIREMENTS (including access and inclusion)


Minimum entry requirements:

- Certificate II (NCQF Level 2) or equivalent.
- Applicants may also be admitted into this qualification based on Recognition of Prior Learning (RPL) and Credit Accumulation Transfer (CAT) in accordance with the institution's RPL and CAT policies in line with the National RPL and CAT Policies.

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

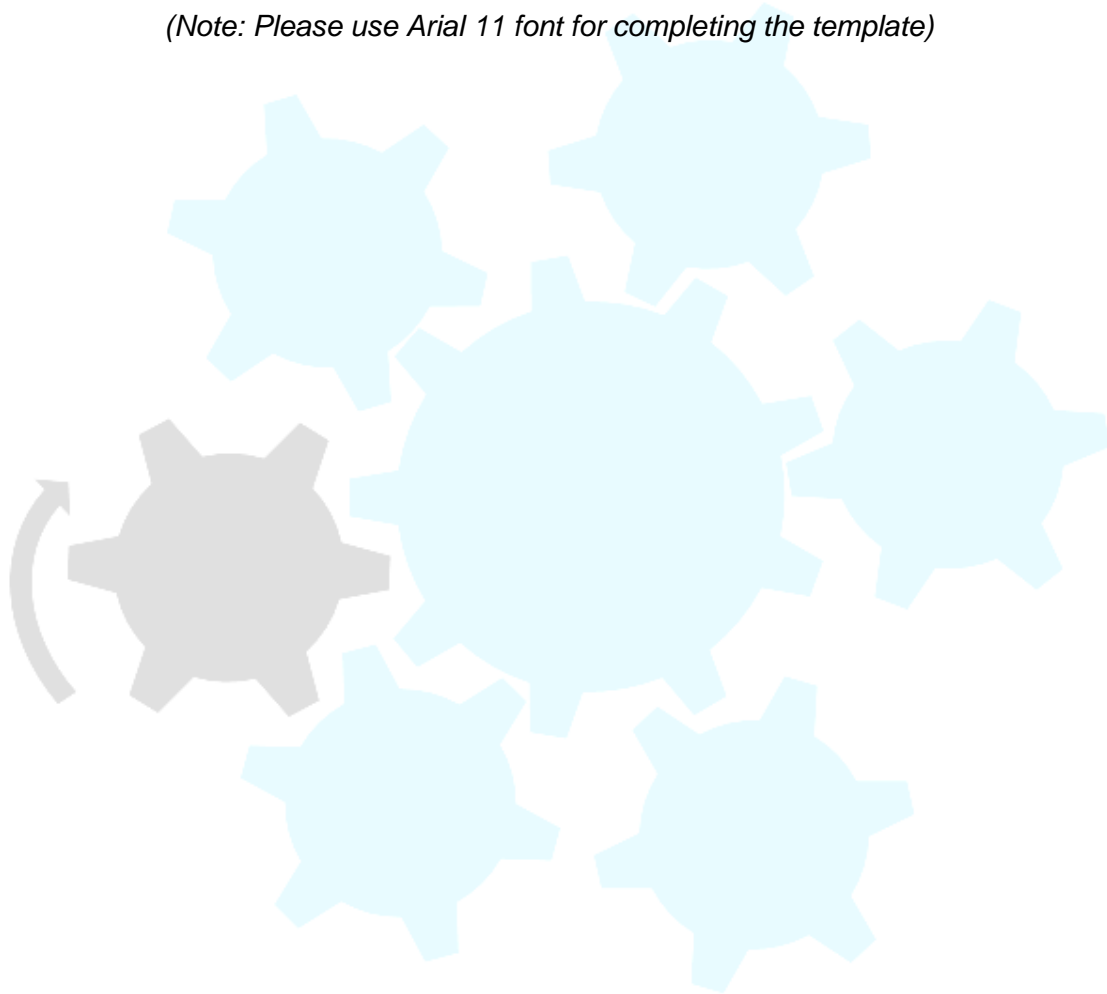
SECTION B QUALIFICATION SPECIFICATION	
GRADUATE PROFILE (LEARNING OUTCOMES)	ASSESSMENT CRITERIA
LO 1. Apply basic metric system of measurements.	1.1 Interpret information and data from drawings. 1.2 Choose suitable unit of measurements for site survey and drawing of a plan. 1.3 Pick Suitable standards of measurements for use when surveying a site and drawing a plan. 1.4 Calculate volume, area and linear measurements identified. 1.5 Determine the required materials for a structure through basic calculations.
LO 2. Demonstrate basic cognitive skills of setting out levelling instruments and taking their readings.	1.1 Determine levels using pegs. 1.2 Use water level to determine levels. 1.3 Interpret Dumpy Level readings to determine correct levels. 1.4 Record readings.
LO 3. Use and maintain Hand tools associated with site surveying.	1.5 Select appropriate safety gear. 1.6 Apply Health and safety procedures on site. 1.7 Use a variety of hand tools during site surveying. 1.8 Select appropriate hand tools for the job. 1.9 Determine the condition of a tool before use. 1.10 Select suitable cutters, blades and bits on tools for a specific job.


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		Issue No.	01
		Effective Date	04/02/2020

	<p>1.11 Identify Risks and hazards associated with the use of a particular tool.</p> <p>2.12 Store tools safely after use in the field.</p>
LO 4. Apply basic setting out skills on site	<p>4.1 Interpret drawings to determine requirements.</p> <p>4.2 Establish site datum far away from site operations.</p> <p>4.3 Fix pegs on the ground to mark excavation area.</p> <p>4.4 Determine suitable tools and materials to be used.</p> <p>4.5 Erect profiles around the excavation area and transfer measurements to them.</p>
LO 5. Perform surveying applications using a Theodolite.	<p>5.1 Determine staff readings on site.</p> <p>5.2 Record Theodolite readings.</p> <p>5.3 Determine horizontal angles on site.</p> <p>5.4 Calculate height of a building.</p> <p>5.5 Regulate levels of a sewer line during construction.</p>
Apply basic principles of Occupational Health and Safety in the Work Environment.	<p>6.1 Identify hazards in the Workplace.</p> <p>6.2 Assess possible risks in the workplace</p> <p>6.3 Practice Good Housekeeping.</p> <p>6.4 Wear Appropriate Personal Protective Equipment.</p>
Demonstrate basic operational knowledge of Entrepreneurial principles in the workplace.	<p>7.1 Plan for given work assignments.</p> <p>7.2 Solve problems creatively in the workplace.</p> <p>7.3 Mobilise people and resources to execute tasks.</p> <p>7.4 Create value through implementation of innovative ideas.</p>


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		Issue No.	01
		Effective Date	04/02/2020

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		Issue No.	01
		Effective Date	04/02/2020

SECTION C	QUALIFICATION STRUCTURE				
COMPONENT	TITLE	Credits Per Relevant NCQF Level			Total (Per Subject/ Course/ Module/ Units)
		Level [2]	Level [3]	Level [4]	
FUNDAMENTAL COMPONENT <i>Subjects/ Courses/ Modules/Units</i>	Health And Safety Procedures For A Building And Construction Site	2			2
	Fundamental Entrepreneurial Principles		2		2
	Introduction to Personal Computer		2		2
CORE COMPONENT <i>Subjects/Courses/ Modules/Units</i>	Working At Heights		3		3
	Business Communications		3		3
	The Metric system		4		4
	Surveying Instruments		4		4
	Survey Drawings		4		4
	Measurements and Calculations in Site Surveying			3	3
	Theodolites and Total Station			3	8
	Tools in Site Surveying			3	4

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

	Standards, Policies and Regulations of Site Surveying			3	3
ELECTIVE/ OPTIONAL COMPONENT <i>Subjects/Courses/ Modules/Units</i>					

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

SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL	
TOTAL CREDITS PER NCQF LEVEL	
NCQF Level	Credit Value
Level 2	2
Level 3	22
Level 4	18
TOTAL CREDITS	42

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

The qualification consists of Fundamental and Core Components.

To be awarded the Qualification learners are required to obtain a minimum of **42** credits as detailed below.

Fundamental Components:

The Fundamental components consist of foundational knowledge in Site Surveying to the value of **6** credits all of which are compulsory

Core Components:

The core components consist of modules containing applied knowledge and practical skills to the value of **36** credits which are compulsory.

Elective Components:

There are no Elective Components for this qualification.

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

ASSESSMENT ARRANGEMENTS

Assessment

All assessments leading to the awarding of this qualification will be based on learning outcomes associated with the following assessment criteria:

1. Formative assessment

The weighting of formative assessment is 60% of the final assessment mark.

2. Summative Assessment

The weighting of summative assessment is 40% of the final mark.

Assessment arrangements will be done by BQA registered and accredited assessors.

MODERATION ARRANGEMENTS

There shall be provision for internal and external moderation done by BQA registered and accredited Moderators.

RECOGNITION OF PRIOR LEARNING

There will be provision Recognition of Prior Learning (RPL) for award of the qualification using ETP RPL Policy in line with the National RPL Policy.

CREDIT ACCUMULATION AND TRANSFER

There shall be access and award of credits of the qualification using Institutional Credit Accumulation and Transfer (CAT) Policy in line with the National CAT Policy.


PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

Articulation and Education Pathways

Horizontal Articulation:

Graduates of this qualification may consider pursuing to other qualifications on the same levels in the field of building construction that include:

- Certificate III in Bricklaying and Plastering

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

- Certificate III in Finishing Carpentry
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Vertical Articulation:

Learners may progress to higher level in the same field such as

- Certificate IV in Building Construction
- Certificate IV in Land Surveying
- Diploma in Construction

Employment Pathways

Learners who attain this qualification will have competencies and attributes to work as:

- Assistant Surveyors:

QUALIFICATION AWARD AND CERTIFICATION

Qualification award:

To be awarded the qualification the candidate must have met the following requirements:

- All exit level outcomes
- Minimum **42** credit requirements

Certification:

Upon completion of the qualification the candidate will be awarded a
CERTIFICATE III SITE SURVEYING.

REGIONAL AND INTERNATIONAL COMPARABILITY

Public and private training providers worldwide offer short courses in Site Surveying.

National Construction College (NCC) which is Construction Industry Training Board (CITB) accredited in (Scotland) National Surveying & Setting out Intermediate Certificate course covers utilizing & understanding survey equipment used in setting out, interpret and check setting out detail on site drawings, carry out all the necessary calculations to establish setting out from site drawings, setting out buildings and structures, setting out drainage, establish temporary bench marks (TBM) and other height controls, observing, computing and adjusting a traverse, utilizing a total station equipment for setting out co-ordinates.

Candidates are continuously assessed through a range of calculation and practical exercises.

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

Candidates who possess the following attributes are eligible for enrolment, ability to change points when levelling, knowledge of how to use a theodolite to measure angles and flair for accuracy. After completion candidates are employed as survey assistants or field assistants in Construction setting out

Tjeka Training (South Africa) Surveying (NQF4) SAQA ID 20486 Field surveying covers survey theory, operate survey instruments, set out predetermined points, perform calculations, produce survey basic plans, and comply with professional ethics.

Candidates are continuously assessed through a range of calculation and practical exercises..

It is ideal for people with industrial experience and having knowledge of undertaking field surveying tasks as survey assistants.

Comparable examples of Site Surveying qualifications at this level were not located in any of the SADC countries, except South Africa.

This certificate in Site Surveying NCQF level 3 has been compared with qualifications from the below countries:

- **South Africa**
- **Australia**
- **United Kingdom**

Comparability

This qualification compares very well with the qualifications it was benchmarked against in terms of content, exit level outcomes, and the number of credits that lead to an award. What however sets this qualification apart from the qualifications it was benchmarked is that it is a full trade, hence the number of 44 credits. The qualification also has both fundamental and elective modules which add more value to it as a full qualification, and also, addressing 21st century skills.

CITF Basic Site Surveying qualification does not put more emphasis on the latest equipment on the market. The other difference is that the Scottish qualification is meant for Engineers, technicians, and supervisors who are already on the field and want to improve their confidence and accuracy in undertaking setting out tasks thus it is running for 4 days while and CITF qualification caters for beginners and those who have had worked in the construction setting out tasks and the runs for 3 or 4 months.

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

The Surveying qualification offered by Tjeka Training in South Africa fits well with the CITF qualification, as most tasks or exit outcomes nearly match each other, though the Tjeka Training Surveying is classified as Specialization Construction Learnerships.

The Scottish qualification allows graduates to further their training into the next level of Advanced Surveying & setting out and CITF qualification prepare candidates to undertake a construction qualification rather than a craft one.

REVIEW PERIOD

Every five (5) years.

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