BQA NCQF QUALIFICATION TEMPLATE

SECTION A:	QUALIFICATION DETAILS								

QUALIFICATION DEVELOPER (S)	Botswana Accountancy College								

TITLE	Diploma in Mobile and Web Technologies				NCQF LEVEL			6	

STRANDS (where applicable)	1. *N/A* 2. *N/A* 3. *N/A* 4. *N/A*								

FIELD	Information and Communication Technology				CREDIT VALUE			240	

SUB FIELD	Media Technology								

New Qualification	✓	Legacy Qualification			Renewal Qualification				
					Registration Code				

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

RATIONALE:

The HRDC Priority Skills report for 2023/2024 highlights the growing demand for skilled professionals in the Information and Communication Technology (ICT) sector. With the rapid evolution of mobile and web technologies, businesses are increasingly relying on these platforms to reach customers and streamline operations. A diploma in Mobile and Web Technologies equips graduates with the necessary skills to meet this demand, making them valuable assets in the job market.

The HRDC report identifies a critical skills gap in mobile application development, web development, and related technologies. By offering a comprehensive curriculum that covers programming

languages, frameworks, and tools essential for mobile and web development, the diploma program directly addresses this gap. Students will gain hands-on experience and practical knowledge, ensuring they are job-ready upon graduation.

Investing in education and training in mobile and web technologies supports economic growth by creating high-quality jobs. The HRDC emphasises the importance of developing a skilled workforce to attract and retain businesses in the ICT sector. Graduates of the diploma program will be well-positioned to contribute to the economy, either by joining existing companies or by starting their own tech ventures.

Mobile and web technologies are global industries with opportunities that extend beyond local markets. The skills acquired through the diploma program are transferable and in demand worldwide, opening international career prospects for graduates. This global perspective is crucial in an interconnected world economy.

PURPOSE: (itemise exit level outcomes)

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

1. Analyse, design and implement solutions for businesses willing to integrate their current day to day way of doing business with the mobile services.
2. Develop web and mobile applications using programming languages such as HTML, CSS, JavaScript, and Java.
3. Adhere to ethical, legal, and professional standards in web and mobile development.
4. Develop web and mobile applications that adhere to accessibility standards to ensure applications are usable by a diverse audience.
5. Collaborate with designers, developers, and other professionals in multidisciplinary teams.

MINIMUM ENTRY REQUIREMENTS (including access and inclusion)

Applicants should have <u>any one</u> of the following:

(a) Certificate IV NCQF Level 4 or equivalent

(b) There will be provision for RPL and CAT for entry according to the national RPL and CAT policies.

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SECTION B	QUALIFICATION SPECIFICATION
GRADUATE PROFILE (LEARNING OUTCOMES)	**ASSESSMENT CRITERIA**
1.1 Evaluate mobile and web technologies development solution strategies for business problems, implement and maintain them	1.1.1: Analyse an existing business and be able to design and develop a computerised solution that can meet the business needs 1.1.2: Use SDLC to develop future-proof mobile application business solution 1.1.3: Apply logic and programming constructs in delivering business solutions 1.1.4: Create native and hybrid mobile applications using web frameworks
1.2 Demonstrate leadership skills in multidisciplinary teams, contributing to project goals and collaborative tasks	1.2.1: Show collaborative and interpersonal skills in project and collaborative tasks in the workplace 1.2.2: Use project management skills to plan and manage web and mobile application projects 1.2.3: Coordinate tasks and timelines with team members
1.3 Apply principles of web and mobile design to create visually appealing and user-friendly interfaces	1.3.1: Facilitate the design and development of user interfaces according to organisational standards and guidelines 1.3.2: Conduct usability tests and analysing user feedback 1.3.3: Follow and apply prototyping principles in user-centred design 1.3.4: Develop wireframes from user requirements for appealing interfaces 1.3.5: Develop user captivating interfaces using user experience principles.
1.4 Demonstrate technical proficiency in the use of tools, technologies, and SDLC methodologies in web and mobile application development.	1.4.1: Use software development methodology principles to make decisions to use agile and other methodologies in projects. 1.4.2: Use IDE's and version control systems to develop mobile applications from user requirements 1.4.3: Perform iterative designs based on user research and testing 1.4.4: Develop, implement, write test strategies for mobile and web application 1.4.5: Build and deploy native and hybrid mobile applications

	1.4.6:	Use project management methodologies to plan and manage a web and mobile development project
1.5 Analyse client requirements to design, develop and implement effective web and mobile technical solutions.	1.5.1:	Adhere to and uphold ethical practises in development processes
	1.5.2:	Develop web applications that adhere to global web standards guided by user requirements
	1.5.3:	Critically evaluate compliance of mobile applications that adhere to user requirements
	1.5.4:	Apply entrepreneurship skills in a business setup.
1.6 Retrieve and manipulate data in web and mobile applications to ensure efficiency data integrity and security.	1.6.1:	Develop backend systems that efficiently manage and retrieve data.
	1.6.2:	Design and implement databases for web and mobile applications.
	1.6.3:	Diagnose and give appropriate solutions to issues that may arise to do with data integrity in mobile and web applications
	1.6.4:	Manage and administer a database in a business environment
	1.6.5:	Design and develop a normalised data model for a mobile application

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SECTION C		QUALIFICATION STRUCTURE			
COMPONENT	TITLE	Credits Per Relevant NCQF Level			Total Credits
		Level [5]	Level [6]	Level [ ]	
FUNDAMENTAL COMPONENT Subjects/ Courses/ Modules/Units	Web and Multimedia Development	20			20
	Communications and Study skills	20			20
	System Design	20			20

	Introduction to Java Programming	**20**			**20**
	Mobile Web Frameworks	**20**			**20**
CORE COMPONENT Subjects/Courses/ Modules/Units	User Experience Designs		**20**		**20**
	Mathematics for Computing		**20**		**20**
	Cross Platform Development for Mobile Application		**20**		**20**
	Mobile Application Development		**20**		**20**
	Database Design and Development		**20**		**20**
	Research and Innovation		**20**		**20**
	Computer Networks		**20**		**20**

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

SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL	
TOTAL CREDITS PER NCQF LEVEL	
NCQF Level	**Credit Value**
Level 5	100
Level 6	140
TOTAL CREDITS	**240**
Rules of Combination: **(Please Indicate combinations for the different constituent components of the qualification)**	
For this qualification, students will do all the modules. There are no electives.	

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ASSESSMENT ARRANGEMENTS
Assessments are formative (40%) and summative (60%)

MODERATION ARRANGEMENTS
Moderation is done on all assessments that earn a student's grade towards attainment of the qualification. It is two-fold, covering internal and external moderation.

RECOGNITION OF PRIOR LEARNING
There is a provision to award credits through RPL.

CREDIT ACCUMULATION AND TRANSFER
Candidates may submit evidence of credits accumulated in related qualifications to be credited for the qualification they are applying for.

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

LEARNING
 a) **Vertical pathways**

   Bachelor of Science in Mobile and Web Technologies
   Bachelor of Engineering Mobile and Web Technologies

 b) **Horizontal**

- Diploma in Applied Business Computing,

- Diploma in Information Communication Technologies

- Diploma in Mobile and Web Technologies

Employment pathway

Upon completion, graduates can secure employment in various computing disciplines beginning at entry level point for the positions. They could venture into industries such as
- Mobile App Developer,
- Web Developer,
- Technical Support Specialist,
- UI/UX Designer,
- Digital Consultant.

They could further enhance themselves with professional bodies like SAP, CISCO, Huawei, Microsoft certifications.

QUALIFICATION AWARD AND CERTIFICATION

To be awarded a **Diploma in Mobile and Web Technologies,** the candidate must have attained a minimum of 240 credits. An award of a Diploma in Mobile and Web Technologies will be made when all requirements are met. Graduates will be issued with a certificate in Diploma in Mobile and Web Technologies

SUMMARY OF REGIONAL AND INTERNATIONAL COMPARABILITY

The titles of the qualifications compared here differ, which may suggest that they are different. However, overall, they both cover modules that are core in the web discipline. The similarity between them is the NQF Level 5. The duration of both of these programmes differs due to the work placement appearing at Vancouver Island University in Canada. This qualification has 18 modules compared to 8 modules from Rosebank College. The Vancouver Island University qualification is richer in modules compared to the Rosebank College qualification. This difference could also be influenced by the different countries and markets that each qualification is targeting and built for.

All qualifications converge in common skills of web development and programming and mobile application programming. Canada qualification is richer on web interaction and more practical modules, with more work placement opportunities.

Comparison Observation against Web & Mobile Development Diploma in Canada

The exit-level outcomes for the Web & Mobile Development Diploma in Canada are much richer, offering students an opportunity to do more and placing students at a much greater added advantage due to the wide spectrum of modules covered. Students will be able to do lots of web programming and web design. The qualification is highly technical and very silent on soft skills, which are also needed in these disciplines.

Overall the Diploma in Mobile and Web Technologies is also at an advantage looking at the modules that it offers. The exit level outcomes do indicate that graduates will have more opportunities in the Web & Mobile Development Diploma due to the level of depth covered. Web & Mobile Development Diploma covers more modules and depth compared to this qualification. It also covers server-side technology, which is very minimal compared to this qualification. However, graduates from the Diploma in Mobile and Web Technologies will get a grounding on software development methodology principles, which is missing in this qualification. This gives graduates of this qualification an opportunity to suit very well in any industry with quick and easy adaptation due to the core modules taught. This qualification also introduces students to scripting technologies, which is also core in this discipline.

Comparison Observation against Higher Certificate in Mobile Application and Web Development (South Africa)

The exit level outcomes for the Higher Certificate in Mobile Application and Web Development from RSA indicate that graduates will have basic skills and knowledge from the qualification. This is due to the low depth of the qualification modules. There is a bit focus of focus on communication and the introduction of soft skills from this qualification, which is needed looking at the nature of the target industry. The employment pathways indicate that graduates from this qualification will be employed as Junior developers etc, which may be beneficial for entry in development environments.

Overall, the Diploma in Mobile and Web Technologies is also at an advantage, looking at the modules that it offers. The exit-level outcomes do indicate that graduates will have more opportunities compared to the Higher Certificate in Mobile Application and Web Development. Due to the core modules that have been adopted in the qualification, graduates will cover more concepts for both web and mobile disciplines.

There has not been any qualification found within the region that can be comparable to a Diploma in Mobile and Web Technologies, except for the Higher Certificate in Mobile Application and Web Development - Rosebank College, South Africa. This may be since mobile technologies are relatively new in these regions and thus have not gained popularity. The need to have it taught as a separate degree programme has not yet emerged within the region. This shall be an advantage to our graduates as they shall be leaders in this domain.

REVIEW PERIOD

The review period is 5 years.

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CODE (ID)			
REGISTRATION STATUS	**BQA DECISION NO.**	**REGISTRATION START DATE**	**REGISTRATION END DATE**
LAST DATE FOR ENROLMENT		**LAST DATE FOR ACHIEVEMENT**	