| ***SECTION A:*** | ***QUALIFICATION DETAILS*** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***QUALIFICATION DEVELOPER (S)*** | ABM University College | | | | | | | | | | | | | | | | | |
| ***TITLE*** | Bachelor of Science in Multimedia Studies | | | | | | | | | | | | | | ***NCQF LEVEL*** | | *7* | |
| ***FIELD*** | Information and Communication Technology | | ***SUB-FIELD*** | | Media Technology | | | | | | | | | | ***CREDIT VALUE*** | | *480* | |
| *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***

**RATIONALE:**

In line with Vision 2036, which states that the young generation will be educated with knowledge of ICT usage in the country as well as in the world, graduates of this qualification will be equipped with both entrepreneurial skills and the ability to work jobs such as sound engineering, image and video editing, graphic design, advertising and publishing. According to Maitlamo Policy, everyone should be aware of the use of ICT national and internationally to improve their businesses (e-commerce) with the use of ICT, improving communication and how we can be protected while using ICT. Botswana's ICT policies support multimedia as a core course in terms of business in today's world. The country and the world need creative candidates to create jobs for others to balance the economy of the country. The Botswana Innovation Hub plays a vital role in the country by polishing the idea of candidates

and turning it to reality or something tangible so that they can create their own products through creativity and arts (multimedia).

As observed in NDP 11, there is both an evolutionary increase, and a desire to deliberately shift towards the computerisation of almost every industry and business enterprise in Botswana. The institution conducted a research study to find out if BSc in Multimedia Studies will be relevant and in high demand in Botswana job market. This involved consulting various sources such as participants, information resources (newspapers), Human Resources Consultants and others. However, the intention of the survey was to identify degree programmes that highly in demand as well as being capable of boosting Botswana 's economy in near future. The findings reveal that BSc in Multimedia Studies was among the list of qualifications highly needed in the job market. Hence, it is ideal to develop the qualification in BSc in Multimedia Studies in Botswana and SADC region.

***PURPOSE:***

The purpose of this qualification is to equip graduates with specialised knowledge, skills, and competence to:

- Manage new projects in the world of multimedia, whether in the leisure and digital entertainment sector for content dissemination across information networks.
- Create digital systems for the management of multimedia information.
- develop multimedia applications in accordance with ethical principles and established codes of practice.
- Provide technical support to multimedia projects in the field of telecommunications, culture, teaching and business.
- Provide support to the technical elements involved in the creation of images and sound related to digital leisure.

***ENTRY REQUIREMENTS (including access and inclusion)***

- Certificate IV NCQF (Botswana General Certificate of Secondary Education (BGCSE)/ International General Certificate of Secondary Education (IGCSE) or equivalent will be considered into the Qualification.
- Learners with relevant work experience or relevant qualification on related field of learning may be eligible for exemptions or credit transfer in accordance with applicable Recognition of Prior Learning (RPL) and Credit Accumulation and Transfer (CAT) policies.

| ***SECTION B*** | ***QUALIFICATION SPECIFICATION*** |
|---|---|
| **GRADUATE PROFILE (LEARNING OUTCOMES)** | **ASSESSMENT CRITERIA** |
| 3.1 Apply coding for game design. | 3.1.1 Discuss Game studies.<br>3.1.2 Demonstrate knowledge of Game Programming.<br>3.1.3 Prepare tools for Game Design.<br>3.1.4 Create Characters for Game Design.<br>3.1.5 Produce Visual Scripts for Game design.<br>3.1.6 Develop Levels and Worlds of Design.<br>3.1.7 Design a system for the game.<br>3.1.8 Create Simulations for the Game.<br>3.1.9 Demonstrate Virtual Reality for Games. |
| 3. 2 Develop mobile applications. | 3.2.1 Assemble Wireframes.<br>3.2.2 Create User Interfaces.<br>3.2.3 Perform User Interface Testing.<br>3.2.4 Prepare Design.<br>3.2.5 Device Coding.<br>3.2.6 Organize Database linkage.<br>3.2.7 Set up for Testing. |
| 3.3 Create portable applications. | 3.3.1 Analyze requirements for an interactive multimedia application.<br>3.3.2 Develop a design specification.<br>3.3.3 Produce an interactive multimedia application.<br>3.3.4 Perform testing. |
| 3.4 Practice camera skills. | 3.4.1 Describe the role of photography.<br>3.4.2 Experiment with camera equipment. |

| | |
|---|---|
| | 3.4.3 Produce photographic images.<br>3.4.4 Articulate ethics in photography. |
| 3.5 Construct a 3d animation series. | 3.5.1 Analyse characteristics of 3D models.<br>3.5.2 Prepare for a 3D animation.<br>3.5.3 Create characters for 3D animation.<br>3.5.4 Acquire elements for 3D animation.<br>3.5.5 Setup rigging for 3dmodels.<br>3.5.6 Produce a 3D animation. |
| 3.6 Produce a motion graphics video Project. | 3.6.1 Discuss principles of storytelling.<br>3.6.2 Analyse motion design principles.<br>3.6.3 Create the audio requirements for the video.<br>3.6.4 Setup for video production.<br>3.6.5 Complete the postproduction. |
| 3.7 Develop a computer program. | 3.7.1 Analyse computer users' needs.<br>3.7.2 Describe software development in modelling.<br>3.7.3 Discuss software development languages.<br>3.7.4 Design a computer programme.<br>3.7.5 Investigate cyber security.<br>3.7.6 Test the programme. |
| 3.8 Produce a recorded sound clip. | 3.8.1 Explore Production in Music Theory.<br>3.8.2 Apply Audio Engineering Principles.<br>3.8.3 Examine Audio Engineering Tools.<br>3.8.4 Compile sound using Digital Audio Workstations. |

| SECTION C | QUALIFICATION STRUCTURE | | | | |
|---|---|---|---|---|---|
| ***COMPONENT*** | ***TITLE*** | ***Credits Per Relevant NCQF Level*** | | | ***Total*** ***(Per** Subject/ Course/ Module/ Units)* |
| | | ***Level [ 5]*** | ***Level [6]*** | ***Level [7]*** | |
| ***FUNDAMENTAL COMPONENT*** *Subjects/ Courses/ Modules/Units* | **Communication & Study Skills 5** | **12** | | | **12** |
| | **Computer Appreciation & Applications** | **12** | | | **12** |
| | **Entrepreneurship Development 1** | | **12** | | **12** |
| | **Discrete Mathematics** | | | **12** | **12** |
| | **Fundamentals of Multimedia Engineering** | **12** | | | **12** |
| | **Principles of Programming** | | **12** | | **12** |
| | **Intro to Digital Photography** | **12** | | | **12** |
| | **Work Experience** | | | **15** | **15** |
| ***CORE COMPONENT*** *Subjects/Courses/ Modules/Units* | **Character Design** | | | **12** | **12** |
| | **Mobile Application Development 1** | **15** | | | **15** |
| | **Game design 1** | | **15** | | **15** |

| | | | | | |
|---|---|---|---|---|---|
| | **3D design 1** | | **15** | | **15** |
| | **Internet Marketing** | | **12** | | **12** |
| | **Leadership Development** | | **12** | | **12** |
| | **Digital Photography** | | | **12** | **12** |
| | **Industrial Attachment** | | | **45** | **45** |
| | **Modelling in UML** | | | **12** | **12** |
| | **Information & Network Security** | | | **12** | **12** |
| | **System Analysis and design** | | | **12** | **12** |
| | **Web design 1** | | **15** | | **15** |
| | **Interactive Design** | | | **15** | **15** |
| | **2D Animation** | | | **15** | **15** |
| | **Project Management** | | | **12** | **12** |
| | **Social Informatics** | | | **12** | **12** |
| | **Copyright and patent laws** | | | **12** | **12** |
| | **System Analysis & Design** | | | **12** | **12** |
| | **Video and Sound Production** | | | **15** | **15** |
| | **Web Design** | | | **15** | **15** |
| | **System Analysis & Design** | | | **12** | **12** |

| | | | | | |
|---|---|---|---|---|---|
| | **Human computer interaction** | | | **12** | **12** |
| | **Undergraduate Major Project 1** | **15** | | | **15** |
| | **Undergraduate Major Project 2** | | | **15** | **15** |
| ***ELECTIVE/ OPTIONAL COMPONENT*** *Subjects/Courses/ Modules/Units* | **Game design 2** | | | **15** | **15** |
| | **3D design 2** | | | **15** | **15** |
| | **Motion graphics** | | | **15** | **15** |
| | **Mobile Application Development 2** | | | **15** | **15** |

| ***SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL*** | |
|---|---|
| ***TOTAL CREDITS PER NCQF LEVEL*** | |
| ***NCQF Level*** | ***Credit Value*** |
| ***5*** | ***78*** |
| ***6*** | ***93*** |
| ***7*** | ***309*** |
| ***TOTAL CREDITS*** | ***480*** |

***Rules of Combination:***

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

Learners shall be expected to successfully complete all Fundamental modules, all core modules and 2 electives. The qualification is worth a total of 480 Credits, inclusive of 99 credits of fundamental modules, 351 Credits for core modules and 30 Credits of the elective modules.

## *ASSESSMENT ARRANGEMENTS*

Assessment shall be carried out by Assessment will be made up of formative and summative assessments carried out as per assessment policies aligned to the national assessment policy. Only assessors accredited by BQA, or any recognized agents will be engaged to carry out assessment and moderation

The weighting of assessment will be as follows:

| Assessment | Weighting |
|---|---|
| Formative | 60% |
| Summative | 40% |

## *MODERATION ARRANGEMENTS*

Internal and external moderation shall be carried out by moderators that accredited by BQA or any recognized agents.

## *RECOGNITION OF PRIOR LEARNING*

Candidates 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 university RPL policies and relevant national-level policy and legislative framework.

## *CREDIT ACCUMULATION AND TRANSFER*

Credit accumulation and transfer will be done according to the policy on credit accumulation and transfer for the award of the qualification.

## *PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)*

**LEARNING PATHWAYS**

**Horizontal Pathways**

A Bachelor of Science in Multimedia Engineering candidates could continue to pursue a bachelor's degree in Other related NCQF Level 7 qualifications, including, but not limited to:

- Bachelor of Science in Animation and Multimedia.
- Bachelor of Science in Multimedia and Communication Technology.

- Bachelor of Science in Multimedia Computing
- Bachelor of Engineering in Audio-visual and Multimedia
- Bachelor of Science Computer Science
- Bachelor of Science Information Technology

**Vertical Pathways**

Completion of a bachelor's degree in Multimedia Engineering meets the requirement for admission to

- Bachelor's Degree Honours in Multimedia Engineering
- Post-Graduate Diploma or Post-Graduate in Multimedia Engineering
- Post Graduate Certificate (NCQF level 8) in Multimedia Engineering.
- Master of Science Computer Science.
- Master of Science Business Technology.
- Master of Science Information Technology.
- Master of Business Administration

**IT certifications**

- MCSA/MCSE (Microsoft Certified Solutions Associate/Expert).
- CCNA (Cisco Certified Network Associate).
- CompTIA
- SCJP (Sun Certified Java Programmer)

**EMPLOYMENT**

After completion of this program the candidate should be able to work as, among others:

- Game designer
- Interactive designer
- Computer Programmer
- Entrepreneur
- Software developer
- Sound engineer
- Website designer
- Animator
- Graphic artist
- Game developer
- Motion graphic artist
- Web developer

- 3-D animator

## *QUALIFICATION AWARD AND CERTIFICATION*

The Bachelor of Science in Multimedia Engineering award shall be issued upon completion of all the specified modules and attainment of 480 Credits. The awarding body will issue a certificate to each successful candidate.

## *REGIONAL AND INTERNATIONAL COMPARABILITY*

This qualification compares with the following:

Cyberjava Campus, Bachelor of Communications in Digital Media (MQF Level 06)

The qualification is worth 120 credits, which develops competencies in demonstrating an entrepreneurial approach, coupled with an understanding of how to further innovate digital media communications. Exhibit extensive theoretical and practical knowledge of digital media communications, an understanding of the basic elements and process of photography, both digital and traditional photography, and the history of photography and understanding of the processes and methods of basic computer-generated imagery, and industry standard design packages. Demonstrate capacities for creativity, transformation, and interpretation.

NSHM Knowledge Campus (India): BSc in Multimedia, Animation and Graphic Design

The qualification offered by NSHM Knowledge has modules that teaches student programming skills which can be used in web programming and game development. The proposed qualification is structured to train students to design visual communication graphics. Both qualifications have similar modules such as Web Content Development, Multimedia Systems, Game Design and Development, User Interfaces Design, Cooperative work placement - Multimedia, Visualization & Animation Technology, Video Production for Multimedia, Multimedia Systems and 2D design. The proposed qualification has additional modules like Introduction to Computers, Mathematics, Creative Publications, Communication Study, Digital Image Processing, Multimedia Games Design and Development. The duration for NSHM Knowledge Campus (India)'s qualification is of 3 years, whereas the proposed qualification is of 4 years.

University of Valencia (Spain) - Degree in Multimedia Engineering:

The qualification offered by University of Valencia (Spain) has compulsory basic computing subjects, alongside optional subjects in computer engineering such as Physics and Mathematics.

Both qualifications have common modules such as: Interactive Communication, Human Computer Interaction, Computer structure, Multimedia programming, Advanced Web Applications, Video Game Development, Programming Languages, Image and Sound Processing II, Computer vision, Database Management, Advanced Animation Techniques, Introduction to computing, computer architecture, Animation, Digital Media, Film theory,

Graphics and Web development. The proposed qualification has additional modules like Interaction Design, Professional practice in Computing, 3D Animation, Audio and Video production, Introduction to Multimedia studies, and Computing Project. Other qualifications offered in countries such as New Zealand and Australia which generally emphasize development of competencies in research on current technology to think and build

their ideas to turn them into reality by producing artifacts and trade and investments, graphic design, human computer interface, software editor and camera operation. Although the qualifications examined generally follow similar structures and standards, there are differences, though not significant, in that in module's strategies assessment, qualification rules, and minimum standards, credits value and NQF levels.

This qualification generally compares well with all the qualifications studied since the exit outcomes cover similar scope and depth and are aligned to exit-level descriptors typical of this level and type of qualification as done within the region and beyond as well as competencies required for registration and accreditation with professional bodies such as BQA and BITS, However, what sets it apart from the qualifications examined, is that there is provision for development of attributes such as sound engineering, video editing and photo shooting which are critical for new comers who want to be an entrepreneur in multimedia design, computer

graphics, electronic advertising, and music producer.

***REVIEW PERIOD***

The qualification will be reviewed after a five (5) year period.

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