Republic of Rwanda
Ministry of Education

RTB | RWANDA TVET BOARD

MUSIC PRODUCTION DEVELOPMENT

MPAMP401

Develop music production techniques

Competence

RQF Level: 4

Learning Hours: 120

Credits: 12

Sector: Art and Craft

Trade: Music and performing arts

Module Type: Elective

Curriculum: ARCMUS4001- TVET Certificate 4 in Music and performing arts

Muhanga,2025

<table>
<tr><td>Purpose statement</td><td colspan="5">The purpose of this module is to equip participants with comprehensive skills and knowledge in music production, enabling them to record, edit and mix professional-grade music tracks. This module is designed to empower learners with both the theoretical understanding and practical expertise required to succeed in the dynamic and ever-evolving field of music production. By the end of this module, participants will have developed the technical proficiency and creative confidence to record, edit and mix recorded audio across various genres and styles, making them versatile and industry-ready professionals.</td></tr>
<tr><td rowspan="6">Delivery modality</td><td colspan="2">Training delivery</td><td>100%</td><td colspan="2">Assessment</td><td>Total 100%</td></tr>
<tr><td colspan="2">Theoretical content</td><td>30%</td><td rowspan="4">Formative assessment</td><td>30%</td><td rowspan="4">50%</td></tr>
<tr><td colspan="2">Practical work:</td><td rowspan="3">70%</td><td rowspan="3">70%</td></tr>
<tr><td>● Group project and presentation</td><td>20%</td></tr>
<tr><td>● Individual project /Work</td><td>50%</td></tr>
<tr><td colspan="3"></td><td colspan="2">Summative Assessment</td><td>50%</td></tr>
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Elements of Competency and Performance Criteria

Elements of competency	Performance criteria
1. Record Audio tracks	1.1. The recording process is properly prepared fitting the project plan and recording gears.
	1.2. Sound to be recorded is properly identified according to the types and sources of sound.
	1.3. Input and output signals are properly tested in line with standard levels.
	1.4. Audio recording is appropriately performed fitting various recording techniques.
2. Edit recorded audio	2.1. The fundamentals of audio editing tools are properly introduced fitting the workflow.
	2.2. Recorded audios are accurately edited to achieve professional quality sound.
	2.3. Common audio problems are accurately solved according to the clean-up procedures.

	2.4.	Creative techniques are properly applied in line with professional standards.
	2.5.	Edited audio are properly exported for various use cases**.**
2. Mix audio tracks	2.1.	EQ and Compression are effectively applied to the edited audios in accordance with EQ and Compression techniques.
	2.2.	Volume tracks levels are properly automated based on the automation principles.
	2.3.	Tracks are well panned in line with panning methods.
	2.4.	Vocal effects are correctly added in accordance with effects addition rules.
	2.5.	Proper undertaking final mix and creation of a master according to production requirements.
	2.6.	Appropriate saving and archiving audio data following the standards.

Course content	
Learning outcomes	**At the end of the module the learner will be able to:** **1. Record Audio tracks** **2. Edit recorded audio** **3. Mix audio tracks**
Learning outcome 1: Record Audio tracks	**Learning hours: 30**
Indicative content	
• **Preparation of audio recording process** ✓ Purpose of recording ✓ Recording requirements ✓ Setting up room, tools and gears • **Identification of types and sources of sound** ✓ Types of sounds to be recorded ✓ Sources of sound • **Input and output signal testing** ✓ Standard reference levels ✓ Check signal integrity ✓ Inspect connections ✓ Test noise levels • **Performing Audio recording techniques** ✓ Microphone placement ✓ Use of pop filters ✓ Direct input (DI) recording ✓ Layering and double tracks	
Resources required for the learning outcome	
Equipment	• Computer • A required Digital Analog Workstation(DAW) • Samples and scenarios • Computer • Documentation • Debates • Samples and scenarios • Documentation • Samples of case studies

	• Role play scenarios
Materials	•
Tools	
Facilitation techniques	• Demonstration on assessment of a project to be arranged • Individual practical exercises on assessment of a project to be arranged • Demonstration on how to move, copy and paste files in the project • Practical exercises on how to move, copy and paste files in the project • Developing mouse skills • Display a master track • Demonstration on use of metering effect • Demonstration on setup of all the tracks (AuxBus, and Master fader) to 0.0 db • Practical exercises on how to set a master fader at 0.0 db • Practical exercise on how to apply a metering effect on a master track • Demonstration on how to control an accurate headroom • Practical exercise on how to control an accurate headroom • Brainstorming on common problems during initialization • Presentation some practical examples • Role play on resolve initialization problems • Debates
Formative assessment methods	• Written evidence • Oral evidence • Performance evidence

Learning outcome 2: Edit recorded audio	Learning hours: 45

Indicative content

- **Introduction to Audio editing**
  - ✓ Overview of audio editing in the music production workflow.
  - ✓ Importing and organizing recorded audio files.
  - ✓ Understanding sample rate, bit depth, and file formats.
  - ✓ Workflow optimization: templates, shortcuts, and navigation tips.

- **Editing recorded audio**

  - ✓ Trimming and cutting
  - ✓ Fading and crossfading
  - ✓ Arranging audio clips
  - ✓ Time-stretching
  - ✓ Pitch correction
  - ✓ Comping
  - ✓ Layering and stacking

- **Audio Cleanup and Problem-Solving**

  - ✓ Noise reduction and removal of unwanted sounds.
  - ✓ De-essing
  - ✓ Click and pop removal
  - ✓ Equalization (EQ) for clarity and balance.

- **Application of Creative Editing Techniques**

  - ✓ Time-based effects: Delay, reverb, and echo for spatial enhancement.
  - ✓ Pitch-based effects: Harmonizing and pitch-shifting.
  - ✓ Glitch and stutter effects: Using chopping and slicing for rhythmical interest.
  - ✓ Reverse audio: Creating unique textures.

- **Exporting Edited Audio**

  - ✓ Bounce settings File formats and quality considerations.
  - ✓ Creating stems Preparing for collaborative workflows.
  - ✓ Versioning and backups: Best practices for saving and archiving.

Resources required for the indicative content	
Equipment	• A required Digital Analog Workstation(DAW) • Audio Interface • Compressor • Computer • DAW • Documentation • Equalizer • Internet • Mentors • Monitors • Patch cables • Plug-ins • Processors • Role play scenarios • Samples and scenarios • Samples of case studies
Materials	• Reference books
Tools	•
Facilitation techniques	• Brainstorming • Group discussion • Research • Practical exercises • Braistorming • Group discussion • Research • Practical exercises • Braistorming • Group discussion • Research • Practical exercises • Practical exercises on headroom management
Formative assessment methods	• Written assessment • Oral presentation • Performance assessment

	• Product evidence

Learning outcome 3: Mix audio tracks	Learning hours: 45

Indicative content

- **Applying EQ**
  - ✓ Identification of EQ
  - ✓ High pass and low pass filter
  - ✓ Avoiding frequency masking
- **Compression to the recorded tracks:**
  - ✓ Apply gain reduction
  - ✓ Determine ratio
  - ✓ Set release and threshold
  - ✓ Apply makeup gain
  - ✓ Sidechain
- **Applying panning.**
  - ✓ Position tracks within the stereo Field
  - ✓ Automate fade in and fade out.
- **Vocal effects Application**
  - ✓ Apply reverb
  - ✓ Apply delay
- **Undertake final mix and create a master**
  - ✓ Metering levels
  - ✓ Dithering techniques
  - ✓ Meet production requirements
- **Save and Archive data**
  - ✓ Saving a project process
  - ✓ Destination
  - ✓ Format

Resources required for the indicative content

Equipment	• A required Digital Analog Workstation(DAW) • Audio Interface • Compressor • Computer • DAW • Documentation • Equalizer

	• Internet • Mentors • Monitors • Monitors • Patch cables • Plug-ins • Processors • Reference books • Reference books • Role play scenarios • Samples and scenarios
Materials	•
Tools	•
Facilitation techniques	• Demonstration on routing • Display of Input and output connectors I/O • Demonstration on each project operations • Individual practical exercises on Input and output connectors I/O • Practical exercises on how to use software tools • Demonstration on the use of effect using hardware and software processors • Demonstration on editing • Individual practical exercises on editing • Demonstration on automation • Practical exercises on automation • Demonstration on balancing • Practical exercises on balancing • Demonstration on use of quantization, synchronization and pitch correction • Practical exercises on use of quantization, synchronization and pitch correction • Demonstration on headroom management • Practical exercises on headroom management
Formative assessment methods	• Written evidence • Oral evidence • Performance evidence • Product evidence •

Integrated/Summative assessment

Integrated Situation

The producer of Alicia Keys based in Los Angeles, CA, USA has contacted you as a mix engineer to mix her latest single entitled "Stay With Me." You have been provided with the recorded audio files for the session in 44.1kHz sample rate and 24-bit depth. The session is located in your documents folder in a file called "STAY WITH ME." There is also a rough mix included among the session files for your reference to get an idea of the artistic direction. Your mix of the song is required in about 4–6 hours. Guide learners in refining their technical proficiency through advanced exercises and repertoire.

Your tasks are to:

1. **Refine the technical aspects of the mix, ensuring clarity and balance.**
2. **Enhance tone production and dynamic range.**
3. **Incorporate artistic interpretation and align with the artistic direction provided in the rough mix.**

Resources

Tools

Tools:

- Digital tuners
- Microphone stands and clamps
- Pop filters
- Headphones
- Audio cables (XLR, TRS)
- MIDI controllers
- Signal processors (hardware or software)

Equipment	• Digital Audio Workstation (DAW) software • Audio interface • Studio monitors • Microphones (dynamic and condenser) • Computers with audio editing capabilities • External storage devices for backups
Materials/ Consumables	**Materials:** • Reference books and case studies on audio production • Session templates • Practice tracks for editing and mixing • Pre-recorded audio samples for analysis • Documentation for session tracking • Audio plugin packages for mixing and mastering

Assessable outcomes	**Assessment criteria (Based on performance criteria)**	**Indicator**	**Observation**		**Marks allocation**
			Yes	**No**	
Learning Outcome 1: Record Audio Tracks (30%)	**1.1. Prepare for the recording process.1.Demonstrate tone**	Recording process aligns with project plan and setup is complete.			**5**

	production and resonance.				
	1.2. Identify sound types and sources.	Correctly identifies sounds and sources for recording.			5
	1.3. Test input and output signals.	Signal flow is tested for integrity and noise levels..			**10**
	1.4. Perform recording techniques.	Applies microphone placement, DI recording, layering, and pop filters appropriately.			**10**
Learning Outcome 2: Edit Recorded Audio (35%)	**2.1. Import and organize audio.**	Audio files are imported and arranged in a logical workflow.			**5**
	2.2. Edit recorded tracks.	Applies trimming, fading, comping, and pitch correction effectively.			**5**
	2.3. Solve audio issues.	Uses noise reduction, de-easing, and EQ techniques to clean tracks.			**5**
	2.4. Apply creative techniques.	Enhances audio with reverb, delay, and pitch effects.			**10**
	2.5. Export edited tracks.	Prepares stems and final audio with correct formats.			**10**
Learning Outcome 3: Mix Audio Tracks (35%)	**3.1. Apply EQ and compression.**	EQ and compression enhance tonal balance and dynamics.			**5**
	3.2. Automate track levels..	Volume, panning, and FX automation enhance			**5**

		transitions and dynamics.			
	3.3. Add vocal effects.	Reverb and delay are applied effectively to vocals.			**5**
	3.4. Finalize the mix.	Mix meets production requirements, including metering and headroom.			**10**
	3.5. Save and archive session data.	Project is saved and archived with proper documentation			**10**
Total marks		**100**			
Percentage Weightage		**100%**			
Minimum Passing line % (Aggregate): 70%					

References:

"**The Mixing Engineer's Handbook**" by Bobby Owsinski: Originally published in 2006, with the latest 5th edition published in 2022 by Bobby Owsinski Media Group. It can be found on Amazon, Barnes & Noble, and other online book retailers

"Modern Recording Techniques" by David Miles Huber and Robert E. Runstein: First published in 1980, with the latest 9th edition published in 2018 by Routledge. It can be found on Amazon, as well as from the publisher's website, and is often available in college and university libraries.

"Audio Engineering 101: A Beginner's Guide to Music Production" by Tim Dittmar: Published in 2013 by Focal Press. It is available on Amazon and other online book retailers.

"Mixing Secrets for the Small Studio" by Mike Senior: First published in 2011, with the latest 2nd edition published in 2018 by Routledge. It can be found on Amazon, the publisher's website, and in some music production-focused libraries.

"The Art of Mixing: A Visual Guide to Recording, Engineering, and Production" by David Gibson: Published in 1997 by Mix Books. It is available on Amazon and other online book retailers.