Republic of Rwanda
Ministry of Education

RTB | RWANDA TVET BOARD

MOTION GRAPHICS

MMPMG501

Produce Motion Graphics

RQF Level: 5

Learning Hours 80

Credits: 8

Sector: ICT and MULTIMEDIA

Trade: MULTIMEDIA PRODUCTION

Module Type: Specific

Curriculum: ICTMMP5001 - TVET Level 5 Multimedia Production

Issue Date: May ,2024

2024-25

Purpose statement	At the end of this module trainees will be able to Animate graphic assets, Synchronize audio with video, and Export motion graphics. This module will equip trainees with the knowledge, skills, and techniques necessary to create compelling and visually engaging motion graphics.					
Leaning assumed to be in place	Dynamic and wave physics					
Delivery modality	**Training delivery**		**100%**	**Assessment**		**Total 100%**
	Theoretical content		25%	Formative assessment	30%	50%
	Practical work:		75%		70%	
	• Group project and presentation	20%				
	• Individual project /Work	50%				
				Summative Assessment		50%

Elements of Competency and Performance Criteria

Elements of competency	Performance criteria
1. Animate graphic assets	1.1. Storyboard is properly interpreted according to project script
	1.2. Graphics assets are effectively gathered according to their types
	1.3. Animation tools are properly selected according their features
	1.4. Graphics are properly animated according to animation techniques
2. Synchronise audio with video	2.1. Both video and audio clips are properly selected to meet quality standards.
	2.2. Audio and Video are properly integrated based on supported formats

	2.3.	Audio is properly synchronized with Video according to types of timecode
	2.4.	Video is properly composited according to composition principles
3. Export motion graphics	3.1.	Media is properly rendered according to exporting procedures
	3.2.	Media is properly stored based on types of media storage
	3.3.	Media are properly delivered in line with delivery mode

Intended Knowledge, Skills and Attitude		
Knowledge	**Skills**	**Attitude**
✓ Describe graphic design principles ✓ Describe typography and layout ✓ Explain branding and visual identity ✓ Describe video formats and codecs	✓ Create Storyboard ✓ Perform Keyframing ✓ Apply Basic computer skills ✓ Use motion graphics software ✓ Manage time ✓ Apply animation techniques ✓ Apply visual effects ✓ Collaborate with clients	✓ Demonstrate creativity by generating original and innovative motion design concepts ✓ Be detail-oriented to ensure polished and accurate motion graphics ✓ Embrace continuous learning to stay abreast of new techniques and trends in motion graphics ✓ Showcase adaptability in adjusting to changes and feedbacks ✓ Show passion by showcasing enthusiasm for design and creating captivating motion graphic work ✓ Demonstrate empathy in understanding audience needs

		for visual appealing motion graphics. ✓ Explore with curiosity, nurturing a desire to experiment with various design approaches. ✓ Demonstrate resilience in handling criticism and challenges ✓ Demonstrate proactivity in taking initiatives

Course content	
Learning outcomes	**At the end of the module the learner will be able to:** ✓ Animate graphic assets ✓ Synchronize audio with video ✓ Export motion graphics

Learning outcome 1: Animate graphic assets	**Learning hours: 40**
Indicative content	

- **Interpretation of storyboard**
  - ✓ Scene descriptions
  - ✓ Action and movement
  - ✓ Camera directions
  - ✓ Transitions
  - ✓ Timeline and sequence
  - ✓ Dialogue, notes and annotations
  - ✓ Credits and metadata

- **Types of graphics assets**
  - ✓ Vector and Raster Graphics
  - ✓ Text/Typography
  - ✓ Icons and Symbols
  - ✓ Infographic Elements
  - ✓ Logo and Brand Assets
  - ✓ UI/UX Elements
  - ✓ Illustrations
  - ✓ Textures and Patterns
  - ✓ Backgrounds and Backdrops
  - ✓ Special Effects
  - ✓ Stock Footage and Footage Elements
  - ✓ Pre-built Templates and Assets
  - ✓ 3D Models
- **Selection of animation tools**
  - ✓ Software features
    - Timeline-Based animation
    - Keyframe animation
    - Motion Paths
    - Effects and Filters
    - Text Animation
    - Vector graphics support
    - 3D Support
    - Masking and compositing
    - Audio Integration
    - Particle Systems
    - Interactivity
    - Rendering and Exporting
    - Plugins and scripting
  - ✓ Hardware specifications

- Processor (CPU)
- Graphics Card (GPU)
- Memory (RAM)
- Storage (SSD recommended)
- Display (High-resolution, color-accurate)
- Input Devices (Graphics tablet or stylus)
- Connectivity (High-speed internet)
- Cooling System
- Ports (USB, DisplayPort, HDMI)
- Operating System

- **Graphic assets animation**
  - ✓ Layer management
    - Layer Naming
    - Layer Properties
    - Layer Hierarchy
    - Parenting layers
    - Layer Groups
    - Layer Masking, and Layer Visibility
  - ✓ Layer transformation
    - Keyframes navigation and Motion paths
    - Animating position, rotation, scale and opacity
    - Anchor points transformation
    - 3D Orientation and camera movements
    - Transitions, arcs and orbits
    - Motion control moves
  - ✓ Motion interpolation and speed transformation
    - Linear Interpolation
    - Ease In/Ease Out Interpolation
    - Bezier Interpolation
    - Spline Interpolation

	Bi-cubic Interpolation
Resources required for the indicative content	
Equipment	Computer, Graphics Tablet, Drawing Monitor, High-Quality Monitor, Graphics Card, Storage Devices
Materials	Books, Storyboards, Graphic assets, Audio assets, pen and papers
Tools	Motion Graphics Software (Adobe After Effects, Adobe Animate, Cinema 4D, Blender) Animation Plugins (Joysticks 'n Sliders, Animation Composer, Duik Bassel, Element 3D, Trapcode Suite, Mettle Suite), Video copilot Video Editing Software and Audio Editing Software
Facilitation techniques	• Trainer present different storyboards samples • Trainer asks trainees to form a small group and list different types of graphic assets • Trainees make a presentation about the difference between types of graphic assets and their use in motion graphic projects • Using demonstration as methodology, trainer ask trainees to animate graphic assets of any type using standard software and hardware tools • Using the same group, trainer provide assets and ask trainee to import, rename, parent, group, and mask graphic assets depending on layering hierarchy then, trainer ask them to animate provided graphic assets using layer transformation technique and add speed using interpolation techniques • Trainer provides video tutorials on how to animate graphic assets
Formative assessment methods	• Written evidence • Performance based assessments

Learning outcome 2: Synchronize audio with video	Learning hours: 25
Indicative content	

- **Selection of video and audio**
  - ✓ Resolution
  - ✓ Frame rate
  - ✓ Video codecs/Compression
  - ✓ Sample Rate
  - ✓ Bit Depth
  - ✓ Audio codecs/Encoding Formats
- **Integration of audio and video**
  - ✓ Video formats
  - ✓ Audio formats
- **Synchronization**
  - ✓ Linear Timecode (LTC)
  - ✓ Drop Frame Timecode
  - ✓ Vertical Interval Timecode (VITC)
  - ✓ MIDI Timecode (MTC)
  - ✓ Non-Drop Frame Timecode
  - ✓ AES-EBU Embedded Timecode
  - ✓ Burnt-In Timecode (BITC)
  - ✓ CTL Timecode (Control Track)
- **Video compositing**
  - ✓ Hierarchy
  - ✓ Balance
  - ✓ Rule of Thirds
  - ✓ Leading Lines
  - ✓ Depth and Layering
  - ✓ Contrast

✓ Repetition and Pattern ✓ Scale and Proportion ✓ Negative Space ✓ Typography ✓ Color Theory ✓ Movement and Timing	
Resources required for the indicative content	
Equipment	Computer, Graphics Tablet, Drawing Monitor, High-Quality Monitor, Graphics Card, Storage Devices
Materials	Headphones, Graphic Assets, Audio Assets
Tools	Sound Libraries and Sound Effects: Native Instruments Komplete, Spitfire Audio libraries, EastWest ComposerCloud and Soundly Audio Editing Software: Adobe Audition, Audacity, WaveLab and Sound Forge Motion Graphics Software (Adobe After Effects, Adobe Animate, Cinema 4D, Blender) Animation Plugins (Joysticks 'n Sliders, Animation Composer, Duik Bassel, Element 3D, Trapcode Suite , Mettle Suite) Video Editing Software and Audio Editing Software
Facilitation techniques	• Trainer asks trainee to form a small and manageable group and ask them to discuss video and audio quality • Using suitable software and hardware tools trainer ask trainees to keep their respective groups and ask them to integrate supported audio and video then, use timecode to synchronise audio with video. • Using demonstrate methodology trainer ask trainee to compose a video • Using small groups trainer provide a folder with all needed materials including storyboard, graphic assets, video and audio clips and ask the trainees to select supported files to be used in motion graphics project. • In their respective groups trainees integrate graphics, video, and audio clips to create a visual appealing composition

	• Trainer provides video tutorials on how to synchronise audio to the video
Formative assessment methods	• Written evidence • Performance based assessments

Learning outcome 3: Export motion graphics	**Learning hours: 15**
Indicative content	

- **Rendering of media**
  - ✓ Media distribution channel
    - Broadcast Television
    - Online Platforms
    - Social Media
    - Stock Footage Websites
    - Over-the-Top (OTT) Streaming Services
    - Social Media Platforms
    - Live Streaming Platforms
  - ✓ Render settings
    - Resolution
    - Frame Rate
    - Codec
    - Alpha Channel
    - Motion Blur
    - Depth of Field
    - Shadows
  - ✓ Output module settings
    - Output Format
    - Codec
    - Resolution
    - Frame Rate
    - Alpha Channel

- Color Depth
- Audio Output
- Metadata

- **Media storage**
  - ✓ Hard Disk Drives (HDD)
  - ✓ Solid State Drives (SSD)
  - ✓ USB Flash Drives
  - ✓ Memory Cards
  - ✓ Network Attached Storage (NAS)
  - ✓ Cloud Storage
  - ✓ Optical Discs
  - ✓ External Hard Drives
  - ✓ Tape Storage
- **Media delivery mode**
  - ✓ Offline Media Delivery
    - Broadcast, cable, and satellite Television
    - Optical Discs (DVDs, Blu-rays)
    - Memory Cards
    - External Hard Drives and Solid-State Disks
  - ✓ Online Media Delivery
    - Live Streaming
    - Social Media Platforms
    - Podcasting
    - Gaming Platforms
    - Over-the-Top (OTT) Streaming
    - Video-on-Demand (VOD)

Resources required for the indicative content	
Equipment	Computer, Graphics Tablet, Drawing Monitor, High-Quality Monitor, Graphics Card, Storage Devices

Materials	Books, Storyboards, Graphic assets, Audio assets, pen and papers
Tools	Video encoding software tools: HandBrake, Adobe Media Encoder, FFmpeg, Sorenson Squeeze, Telestream Episode, XMedia Recode, MPEG Streamclip, AVS Video Converter, DivX Converter, Apple Compressor. Video editing tools: Adobe After Effects, Adobe Premiere Pro, Final Cut Pro X, DaVinci Resolve, Avid Media Composer, Sony Vegas Pro, HitFilm Pro, iMovie, Filmora and Lightworks
Facilitation techniques	• Trainer forms a small group of trainees and asks trainees to discuss on different media distribution channels then, presentation discussed distribution channels • Using demonstration methodology trainer ask trainees in their respective groups to render the output video using selected software and hardware tools. • Trainer ask trainees to present media storage types and use them to store a rendered video/ final output • Using the provided groups, trainer ask trainees to discuss and make a presentation of media delivery mode • Trainer provides with trainee's video tutorials on exporting videos
Formative assessment methods	• Written evidence • Performance based assessments • Oral evidence • Product based assessment

Integrated/Summative assessment

Integrated situation
ZEBRA Production is digital media production company based in Kigali – Kimihurura. Last year, **ZEBRA Production** initiated the development of E-learning content for Humanitarian Supplies. Unfortunately, the project did not meet expectations of quality standards due to lacking professionalism of some members, and a limited team size. Consequently, ZEBRA Production is now seeking freelancers to contribute to the project's success. As motion graphic designer, you have been chosen to join the production team.

The project director has provided you with a script, storyboard, voiceover, and various video and audio clips related to one of the topics titled "**Role in Waste Management in Emergencies**." You are asked to produce motion graphics video; this video is outlined as follows:

1. Animation of graphic assets
    a. Animate ZEBRA Production logo within 1 second duration
    b. Animate title of the topic within 1 second duration
    c. Animate Icons, illustrations, and vector assets representing preventable and inevitable waste within 5 seconds duration
    d. Animate infographic highlighting the protection of 80% of people, 70% of animals, and 50% of the environment in emergencies within 3 seconds duration
2. Import the animated assets, provided video and audio clips in selected software tool
3. Synchronize the voiceover with the video
4. Export graphic assets in MOV format with animation preset and alpha channel for a transparent background.
5. Export the video in MP4 format using the H624 codec, with a frame rate of 24 frames per second and a resolution of 1920 by 1080 pixels.
6. Store the video on your cloud storage (Google Drive or Dropbox)
7. Share the link to the provided email, ensuring accessibility for anyone with the link.

This task will be completed within 8 Hours. All resources will provide

Resources

Tools	Motion Graphics Software (Adobe After Effects, Adobe Animate, Cinema 4D, Blender) Animation Plugins (Joysticks 'n Sliders, Animation Composer, Duik Bassel, Element 3D, Trapcode Suite , Mettle Suite) Video Editing Software and Audio Editing Software
Equipment	Computer, Graphics Tablet, Drawing Monitor, High-Quality Monitor, Graphics Card, Storage Devices
Materials/ Consumables	Books, Storyboards, Graphic assets, Audio assets, pen and papers

Assessable outcomes		Indicator	Observation	

	Assessment criteria (Based on performance criteria)		Yes	No	Marks allocation
Learning outcome 1: Animate graphic assets	1.1. Storyboard is interpreted	✓ Scene descriptions			2
		✓ Action and movement			2
		✓ Camera directions			2
		✓ Timeline and sequence			4
	1.2. Graphics assets are gathered	✓ Vector and Raster Graphics			2
		✓ Text/Typography			2
		✓ Icons and Symbols			1
		✓ Infographic Elements			3
		✓ Logo and Brand Assets			2
		✓ Illustrations			1
	1.3. Animation tools are selected	✓ Software features			1
		✓ Hardware specifications			1
	1.4. Graphics are animated	✓ Layer management (renaming, grouping, parenting and hierarchy)			6
		✓ Layer transformation			8
		✓ Motion interpolation			4
		✓ Speed transformation			3

Learning outcome 2: Synchronise audio with video	2.1. Both video and audio clips are selected	✓ Resolution of 1920 by 1080 pixels			2
		✓ Frame rate of 24 frames per second			2
		✓ Video codecs/Compression of H624 codecs			2
		✓ Sample Rate			1
		✓ Bit Depth			1
		✓ Audio codecs/Encoding Formats			1
	2.2. Audio and Video are integrated	✓ Video formats (MP4)			2
		✓ Audio formats			1
	2.3. Audio is synchronized with Video	✓ Linear Timecode (LTC)			2
		✓ Drop Frame Timecode			2
	2.4. Video is composited	✓ Hierarchy			2
		✓ Balance			2
		✓ Rule of Thirds			2
		✓ Scale and Proportion			2
		✓ Typography			2
		✓ Color Theory			2
		✓ Movement and Timing			2
Learning outcome 3: Export motion graphics	3.1. Media is rendered	✓ Media distribution channel			2
		✓ Render settings (Resolution; Frame			5

		Rate; Codec and Alpha Channel)			
		✓ Output module settings			4
	3.2. Media is stored	✓ Hard Disk Drives (HDD)			2
		✓ Cloud Storage			3
		✓ Solid State Drives (SSD)			2
		✓ External Hard Drives			2
	3.3. Media are delivered	✓ Online Media Delivery			5
Total marks					**100**
Percentage Weightage					**100%**
Minimum Passing line % (Aggregate): 70%					

References:

1. Smith, J. (2020). Motion Graphics Design: A Beginners Guide. Routledge.
2. Meyer, C. (2019). Creating Motion Graphics with After Effects (6th ed.). Peachpit Press.
3. Gair, T. (2017). Design for Motion: Fundamentals and Techniques of Motion Design. Routledge.
4. Shaw, R. (2019). The Art and Science of Digital Compositing (3rd ed.). Morgan Kaufmann.