Republic of Rwanda
Ministry of Education

RTB | RWANDA TVET BOARD

Lighting

MMPML401

Manage Lighting

Competence

RQF Level: 4

Learning Hours 50

Credits: 5

Sector: ICT and Multimedia

Trade: Multimedia Production

Module Type: Specific

Curriculum: TVET Certificate IV in Multimedia Production

Issued Date: May 2023

Purpose statement	This module provides skills, knowledge and attitudes to, design and implement the lighting setup as directed by the director of photography (DP) or lighting designer, at the end of this module a trainee will be able to prepare, set and operate lighting equipment, tools and accessories to achieve the desired lighting effects and mood of a scene.				
Learning assumed to be in place	N/A				
Delivery modality	**Training delivery**		**100%**	**Assessment**	**Total 100%**
	Theoretical content		30%	Formative assessment 30%	50%
	Practical work:		70%	70%	
	• Group work and presentation	30%			
	• Individual work	40%			
			Summative Assessment		50%

Elements of Competency and Performance Criteria

Elements of competency	Performance criteria
1. Prepare a lighting plan	1.1. Script have been properly interpreted based on project requirement
	1.2. Location have been properly scouted based on the lighting requirement
	1.3. Cost have been properly estimated based on the project requirement
	1.4. A lighting brief have been properly created based on the project requirements
	1.5. Lighting Equipment, materials and tools have been properly selected based on the set environment
	1.6. Lighting techniques to use have been properly selected based on the project requirements
2. Set Lighting	2.1. Lighting equipment have been properly set based on

Equipment and Accessories	safety, technical and production requirements.
	2.2. Lighting Accessories have been properly added based on safety, technical and production requirements.
	2.3. A creative look has been properly created based on the project requirements
	2.4. The lighting techniques has been properly applied based on the set environment
	2.5. The lighting ratios have been adjusted according to the desired level of contrast and depth in response to the scene requirements
	2.6. Color temperature have been properly adjusted based on the project required mood
	2.7. Lighting have been properly tested based on the project requirement
3. Operate Lighting Equipment	3.1. Lighting equipment have been properly controlled based on safety, technical and production requirements.
	3.2. Light direction has been properly changed based on the scene requirements
	3.3. Light modifiers have been properly used based on the scene requirements
	3.4. Color temperature have been properly adjusted based on the scene requirements.
	3.5. Knobs and slides have been properly adjusted based on the scene requirements.
	3.6. Instructions have been properly executed in response to DOP communication.
	3.7. Lighting equipment are properly maintained based on safety requirements

Knowledge, Skills, and Attitude

Knowledge	Skills	Attitude
✓ Knowledge of light	✓ Analytical skills	✓ Action oriented
✓ Color of light	✓ Communication skills	✓ Attentive
✓ Reflection	✓ Computer skills	✓ Cooperative
✓ Refraction	✓ Documentation skills	✓ Courageous
✓ Absorption	✓ Time management skills	✓ Decisive

✓ Interface ✓ Waves speed and different media	✓ Reading comprehension ✓ Writing ✓ Active listening ✓ Critical thinking ✓ Speaking ✓ Time management ✓ Quality control Analysis ✓ Judgment and decision making ✓ System analysis ✓ Active learning ✓ Social perceptiveness	✓ Faithful ✓ Flexible ✓ Goal oriented ✓ Honest ✓ Humble ✓ Innovative ✓ Observant ✓ Patient ✓ Polite ✓ Problem solving ✓ Punctual ✓ Responsible ✓ Self-confident ✓ Self-motivated ✓ Self-motivated ✓ Skilful

Course content

Learning outcomes	At the end of the module the learner will be able to: 1. Prepare lighting plan 2. Set lighting equipment 3. Operate lighting equipment
Learning outcome 1: **Prepare lighting plan**	**Learning hours: 7**
Indicative content	
• **Introduction to Script** ✓ Identify script types Screenplay Stage Play Teleplay Musical Script	

- Documentary Script

✓ Elements of the script

✓ Script interpretation techniques

- Textual analysis
- Character analysis
- Subtext analysis
- Dramatic structure analysis
- Theme exploration
- Contextual research
- Collaborative discussions
- Rehearsals and experimentation

✓ Script breakdown

- Read and familiarize
- Scene breakdown
- Location breakdown
- Character breakdown
- Props and set dressing breakdown
- Costumes breakdown
- Makeup and hair breakdown
- Special effects breakdown

- **Location scouting**

✓ Safety and security

- Electrical safety
- Fire safety
- Trip hazards
- Emergency access
- Security measures
- Structural integrity

✓ Relevance to the Story

- Emotion tone
- Time and place
- Genre and style
- Visual hierarchy

- ✓ Logistic accessibility
  - Power accessibility
  - Storage space
  - Lighting control room
  - Transportation and Accommodation
- ✓ Location agreement
  - Permission
  - Insurances
  - Location fees
  - Date and duration
  - Access and use

- **Cost Estimation**
  - ✓ Identifying items
    - Equipment, materials and tools fees
    - Human resources fees
    - Tax Fees
    - Location fees
    - Permits and Licenses fees
    - Insurance fees
    - Transportation and accommodation fees
    - Location preparation and restoration fees
    - Contingency fees
  - ✓ Estimating unit cost
  - ✓ Calculating grand total
- **Interpreting lighting brief**
  - ✓ Project overview
  - ✓ Goals and objectives
  - ✓ Functional requirements
  - ✓ Technical specification
  - ✓ Supporting documents
- **Selection of lighting equipment, materials and tools**
  - ✓ Lighting equipment
  - ✓ Lighting materials

- ✓ Lighting tools

- **Selection of lighting techniques**
  - ✓ Three-point lighting
  - ✓ High key lighting
  - ✓ Low key lighting
  - ✓ Silhouette lighting
  - ✓ Hard and soft lighting
  - ✓ Colour lighting
  - ✓ Natural lighting

Resources required for the learning outcome	
Equipment	Lighting mixers, grip stand, light stand, curtain kit, strip box, soft box, green/blue screen portables, umbrella diffusion, umbrella reflector
Materials	Lighting fixtures, reflector, ac adapter, battery, lamp case, sand bag, gels, diffuser, grids, shield cables, unshielded cables, ethernet cables, wireless DMX cables
Tools	Screwdrivers, pliers, wire strippers, battery charger, light meter
Facilitation techniques	▪ Demonstration ▪ Practical exercise ▪ Trainer guided practices ▪ Brainstorming ▪ Tutorial video
Formative assessment methods /(CAT)	▪ Written assessment ▪ Performance assessment

Learning outcome 2: **Set lighting equipment and accessories**	**Learning hours: 26**
Indicative content	

- **Set up lighting equipment**
  - ✓ Light placements
  - ✓ Light configuration
  - ✓ Testing

- **Adding lighting accessories**
- **Creation of creative look**
  - ✓ Contrast and shadow
  - ✓ Dynamic lighting transitions
  - ✓ Lighting angles
- **Application of lighting techniques**
  - ✓ Three-point lighting
  - ✓ High key lighting
  - ✓ Low key lighting
  - ✓ Silhouette lighting
  - ✓ Hard and soft lighting
  - ✓ Color lighting
  - ✓ Natural lighting
- **Adjusting lighting ratios**
  - ✓ 1:1 (even lighting)
  - ✓ 2:1 (low contrast)
  - ✓ 3:1 (normal contrast)
  - ✓ 4:1 or 5:1 (medium contrast)
  - ✓ 8:1 or higher (high contrast)
- **Adjusting color temperature**
  - ✓ Types of color temperature
    - Incandescent
    - Halogen
    - Fluorescent
    - LED
    - Daylight
    - Kelvin Temperature
  - ✓ Color temperature ranges
    - Warm color
    - Neutral color
    - Cool color
- **Testing lighting**
  - ✓ Exposure levels

✓ Lighting ratios ✓ Color intensity ✓ Color temperature ✓ Lighting direction and angles

Resources required for the learning outcome	
Equipment	Lighting Mixers, Grip stand, Light stand, Curtain kit, Strip box, Soft box, Green/blue screen portables, Umbrella diffusion, Umbrella reflector.
Materials	Lighting Fixtures, Reflector, AC adapter, Battery, Lamp case, Sand bag, Gels, Diffuser, Grids, Shield cables, Unshield cables, Ethernet cables, Wireless DMX cables
Tools	Screwdrivers, pliers, wire strippers, battery charger, light meter
Facilitation techniques	▪ Demonstration ▪ Practical exercise ▪ Trainer guided practices ▪ Brainstorming ▪ Tutorial video
Formative assessment methods /(CAT)	▪ Written assessment ▪ Performance assessment

Learning outcome 3: Operate lighting equipment	**Learning hours: 17**
Indicative content	
• **Controlling lighting equipment** ✓ Lighting mixers ✓ Lights ✓ Light meters and remote triggers • **Changing light direction** ✓ Light angles ✓ Light position	

- ✓ Light movements

- **Using light modifier**
  - ✓ Soft box
  - ✓ Umbrella
  - ✓ Diffusion Pane
  - ✓ Reflector
  - ✓ Grid
  - ✓ Gels
  - ✓ Snoot
  - ✓ Beauty dish
  - ✓ Barn doors
- **Adjusting color temperature**
  - ✓ White balance
- **Adjusting knobs and slides**
  - ✓ Adjusting knobs
  - ✓ Adjusting slides
- **Execution of instruction**
  - ✓ Collaborating with the team
- **Maintaining Light equipment**
  - ✓ Using cleaning tools
    - Soft cloths
    - Brush
    - Blower
    - Compressed air
  - ✓ Handling and packaging of light equipment
  - ✓ Storing of equipment of light equipment

Resources required for the learning outcome	
Equipment	Lighting Mixers, Grip stand, Light stand, Curtain kit, Strip box, Soft box, Green/blue screen portables, Umbrella diffusion, Umbrella reflector.
Materials	Lighting Fixtures, Reflector, AC adapter, Battery, Lamp case, Sand bag, Gels, Diffuser, Grids, Shield cables, Unshield cables, Ethernet cables, Wireless DMX cables

Tools	Screwdrivers, Pliers, Wire strippers, Battery charger, Light meter
Facilitation techniques	▪ Demonstration ▪ Practical exercise ▪ Trainer guided practices ▪ Brainstorming ▪ Tutorial video
Formative assessment methods /(CAT)	▪ Written assessment ▪ Performance assessment

Integrated/Summative assessment

Integrated situation

Star Media entertainments is a company that prepare events in Rwanda, they prepare live music concerts and live theatres. They want to prepare a live music concert that will take place at Keza garden starting from 09:00 PM. But the previous events were not good due to unskilled gaffer.

So, they need a competent gaffer who will help them to prepare and manage lighting. As a Lighting technician you are hired to prepare, set up and manage lighting. The task must be done in two hours and be ready 1 hour before the starting time.

Resources

Tools	Screwdrivers, Pliers, Wire strippers, Battery charger, Light meter
Equipment	Lighting Mixers, Grip stand, Light stand, Curtain kit, Strip box, Soft box, Green/blue screen portables, Umbrella diffusion, Umbrella reflector.
Materials/ Consumables	Lighting Fixtures, Reflector, AC adapter, Battery, Lamp case, Sand bag, Gels, Diffuser, Grids, Shield cables, Unshield cables, Ethernet cables, Wireless DMX cables

Assessable outcomes	Assessment criteria (Based on performance criteria)	Indicator	Observation		Marks allocation
			Yes	No	
	1.1 Script is interpreted	Script interpretation techniques are applied			2

1. Prepare Lighting Plan		Script breakdown is interpreted			2
	1.2 Location is Scouted	Location safety and security are identified			2
		Logistics are interpreted			2
	1.3 lighting equipment, materials and tools are Selected	Lighting equipment are selected			2
		Lighting materials are selected			2
		Lighting tools are selected			2
2. Set Lighting Equipment and Accessories	2.1 Lighting equipment are set up	Light is placed			3
		Light is configured			3
		Light is tested			3
	2.2 Lighting accessories are added	Lighting accessories are well added			3
	2.3 Creative look are created	Contrast and shadow are adjusted			3
		Dynamic lighting transition are applied			3
		Lighting angles are adjusted			3
	2.4 lighting techniques are applied	Three-point lighting are applied			2
		Hard and soft lighting are applied			2
		Color Lighting are applied			2
		Color temperature types are selected			2

	2.5 Color temperature are adjusted	Color temperature range are identified			2
	2.6 Light testing is done	Exposure level is tested			3
		Lighting ratios is tested			3
		Color intensity is tested			3
		Color temperature			3
		Lighting direction and angles			3
3. Operate Lighting Equipment	3.1Llighting equipment controlled	Lighting mixers are controlled			3
		Lights are controlled			3
		Light meters and remote triggers are controlled			3
	3.2 Light Direction is changed	Light angles are changed			3
		Light positions are changed			3
		Light movements are changed			3
	3.3 Light Modifier are Used	Reflectors are used			3
		Grid are used			3
		Gels are used			3
	3.4 Color temperature is adjusted	White balance is adjusted			3
	3.5 Knobs and slides are adjusted	Knobs are adjusted			2
		Slides are adjusted			2
	3.6 Maintaining Light equipment	Cleaning tools are used			2
		Light equipment are packed			2
		Light equipment are stored			2
Total marks					……
Percentage Weightage					100%

Minimum Passing line % (Aggregate):
70%

References

1. Jackman, J. (2010). Lighting for Digital Video and Television. Focal Press.
2. Box, H. C. (2014). The Set Lighting Technician's Handbook: The Film Lighting Equipment, Practice, and Electrical Distribution. Focal Press.
3. Schaefer, D., & Salvato, L. (2013). Masters of Light: Conversations with Contemporary Cinematographers. University of California Press.
4. Alton, J. (1995). Painting with Light. University of California Press.
5. Malkiewicz, K. (1992). Film Lighting: Talks with Hollywood's Cinematographers and Gaffers. Simon & Schuster.
6. Landau, D. (2014). Lighting for Cinematography: A Practical Guide to the Art and Craft of Lighting for the Moving Image. Bloomsbury Academic.
7. Box, H. (2010). Set Lighting Technician's Handbook: Film Lighting Equipment, Practice, and Electrical Distribution. Focal Press.