

**SPECIAL**

Methodology of working with digital tools  
in the field of Media Production - e-learning  
- e-learning package with video lessons

October 2019 - March 2022

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*PROJECT PARTNERS*

*PROJECT INFORMATION*

*Project number: 2019-1-R001-KA202-063974*

*October 2019 - March 2022*

*[www.rtv-erasmusproject.eu](http://www.rtv-erasmusproject.eu)*

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*Erasmus+ Key Action 2 Strategic Partnership in the VET field*  
*Project: RTV - KEY COMPETENCES IN MEDIA PRODUCTION FOR RADIO, FILM AND TELEVISION*  
*Agreement number: 2019-1-R001-KA202-063974*

## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: SLR camera**

*(A short history; What does SLR mean ?; Camera parts; Classifications)*

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Appropriate use of terminology and specific languages to know the SLR camera;
- Knowledge of the components of the SLR camera;
- Recognition of SLR camera types.

**Specific skills:**

- Define the SLR camera;

- Knowledge of the history of SLR cameras;
- Knowledge of the principle of operation of a SLR camera
- Understanding the role of the components of the SLR camera;
- Ability to differentiate the types of SLR cameras. **Objective operationale:**

*Cognitive:*

- O1: define the SLR camera;
- O2: identify the component parts of the SLR camera;
- O3: Know the classification criteria of SLR cameras;

*Formative:*

- O4: identify camera models;
- O5: Recognize SLR camera models;
- O6: Recognize the main components of the SLR camera;

*Attitudinal:*

- O7: show interest in acquiring knowledge about the SLR camera.

**Values and attitudes:**

- Demonstrate readiness to apply the knowledge gained about the SLR camera
- Identify the importance of knowing the types of SLR cameras

**Strategy:** directed, inductive - deductive, explanatory - conversational;

**Ways:**

*expository - heuristic: M1 - explanation; M2 - heuristic conversation;  
 interactive: M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization.*

**Assessment: informative** (notions and classifications regarding the camera) **and formative** (acquisition of new knowledge about the camera, correct use of specialized language, ability to synthesize and analyze, ability to use cameras in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project.

**Ways:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation.

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

- Printed and digital images / photos, media such as magazines, newspapers, websites
- Camera, photo software
- Computer with high speed internet access
- Schemes for using cameras and / or mobile devices that allow photo editing
- Digital tables
- Smart devices, cables and specific equipment
- Specialized laboratory

**Resources:** *humans:* 20 students

*of time:* 50'

*materials:* - official: m 1 Curriculum for the respective subject (Photography);

m 2 Didactic macro-design;

m 3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

- unofficiale: m 6 – *worksheet*

**Appendix 1**

## **FEED-BACK SHEET**

I. Briefly describe the history of the cameras.

II. List the component parts of the camera.

III. List the classification criteria of the cameras.

IV. Define the concept of SLR.

**Working time: 10 minutes**

*Material made within the Erasmus + project:*

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## **LESSON PLAN**

**Educational establishment:** MEDIA Technical College

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Digital Camera (D-SLR)**

*(DSLR history; Image sensors; Types of digital devices)*

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:** - Appropriate use of terminology and specific languages to know the DSLR camera;  
- Understanding the role of image sensors in the construction of digital cameras;

- Recognition of types of digital cameras.

**Specific skills:**

- Knowledge of the history of digital cameras and digital photography;
- Understanding the role of image sensors in the operation of digital cameras;
- Defining the types of digital devices;
- Ability to differentiate camera types.

**Operational objectives:**

*Cognitive:*

- O1: define image sensors;*
- O2: define the digital camera;*
- O3: identify the digital camera;*

*Training:*

- O4: identify camera models;*
- O5: Recognize digital camera models;*
- O6: recognize the role of image sensors;*
- O7: recognize basic variants for CMOS image sensors;*

*Attitudinal:*

- O8: show interest in acquiring knowledge about the digital camera.*

**Values and attitudes:**

Demonstrate a willingness to apply the knowledge gained about the digital camera  
Identify the importance of knowing the types of image sensors used in digital cameras

**Strategies:** directed, inductive - deductive, explanatory - conversational;



**Ways:**

expository - heuristic: M1 - explanation; M2 - heuristic conversation;  
interactive: M3 - “learning through discovery”; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization.

**Assessment: informative** (notions and classifications regarding the digital camera) **and formative** (the acquisition of new knowledge about the digital camera, the correct use of the specialized language, the capacity of synthesis and analysis, the ability to use the digital camera in a context / application date).

**Assessment tools:** oral verification; systematic observation; individual and / or group project.

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation.

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

- Printed and digital images / photos, media such as magazines, newspapers, websites
- Camera, photo software
- Computer with high speed internet access
- Schemes for using cameras and / or mobile devices that allow photo editing
- Digital tables
- Smart devices, cables and specific equipment
- Specialized laboratory

**Resources: human: 20 students**

**time: 50 '**

**Resources: materials:** - *official: m 1 School curriculum for the respective discipline (Photography);*

*m 2 Didactic macro-design;*

*m 3 Design of learning units and laboratories;*

*m4 The manual;*

*m5 Methodological guide;*

- *unofficial: m 6 - Worksheet 1*

**FEED-BACK SHEET**

- I. List the methods used to read data from the CCD sensor of the digital camera.
- II. List the basic options for CMOS image sensors.
- III. List the types of digital cameras.
- IV. Compare SLR cameras with D-SLRs.

**Working time: 10 minutes**

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## **LESSON PLAN**

**Educational establishment:** MEDIA Technical College

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: The objective**

(Photographic lens; Focal length, Depth of field; Variable focal length lenses)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:** - Appropriate use of specific terminology and languages to explain the notions of:  
photographic lens, focal length, depth of field, lenses with variable focal length;  
- Understanding the role of the camera lens as the most important piece;  
- Understanding the notion of focal length;

- Understanding the notion of depth of field;
- Recognition of the parameters inscribed on the lens mount.

**Specific skills:** - Ability to use photographic lenses;  
- Understanding the mechanism for adjusting the focal length;  
- Ability to adjust the photographic lens to obtain depth of field and a clear image of bodies at different distances from the camera or film camera;  
- Defining the focal length and depth of field;  
- Adjust the characteristics of the lens for better clarity and depth of field.

**Operational objectives:**

**Cognitive:**

O1: to define the photographic objective;  
O2: define the focal length;  
O3: understand the notion of depth of field;  
O4: know the types of lenses according to the focal length (lens with normal focal length, wide-angle lens and telephoto lens);

**Training:**

O5: be able to use the photographic lens to take photographs of bodies at different distances from the camera;  
O6: be able to adjust the characteristics inscribed on the lens mount in order to obtain the clearest possible image;

**Attitudinal:**

O7: show interest in acquiring knowledge about photographic lenses.

**Values and attitudes:**

Manifestation of willingness to apply the knowledge acquired about photographic lenses  
Manifestation of creativity in the use of photographic lenses  
Identify the types of photographic lenses and know their use

**Strategies:** directed, inductive - deductive, explanatory - conversational;

**Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

## **FEED-BACK SHEET**

I. Shoot, using different types of lenses, objects at different distances and compare the clarity of these photos.

II. Notice the differences in sharpness between photos taken with different lenses (normal focal length lens, wide-angle lens, and telephoto lens).

**Working time: 20 minutes**

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## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Photo Filters (I)**

(The notion of photographic filter; The principle of action of filters; Criteria for classifying filters; Filter factor; Filters and image quality)

Type of lesson: mixed (**acquisition of general and specific knowledge, their systematization, practice and assessment of intellectual work skills**) and in hybrid system (**in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for teaching-learning in the environment online**).

General skills:

- 1. Appropriate use of specific terminology and languages to explain the notion of photographic filter,**

- 2. Understanding the principles of action of photographic filters,**
- 3. Recognize the types of photo filters**
- 4. Understanding and recognizing the areas of use of photo filters, examples, models.**

**Specific skills:**

- 1.1. Correct definition of photo filters
- 2.1. Transposition by exercise of the action of colored filters
- 3.1. Using the types of filters to present some examples
- 4.1. Use filters to get good image quality

**Operational objectives:**

*Cognitive:*

*O1: define each photo filter*

*O2: define the colored filters*

*O3: define the most important criteria that differentiate photo filters according to their usefulness*

*O4: to know*

*Training:*

*O5: identify photo filters*

*O6: Identify the most important criteria by which photo filters are classified*

*O7: differentiate photo filters*

*O8: operate with learned photo filters*

*Attitudinal:*

*O9: Interest in distinguishing types of photographic filters*

*O10: Seriousness in applying the knowledge and skills acquired during the lesson*

**Values and attitudes:**

Demonstration of availability to apply the knowledge acquired about the photo filters used in photo-video-cinematography  
Identifying the importance of choosing the right photo filters for the type of photography and / or filming: indoor or outdoor

**Strategies:** directed, inductive - deductive, explanatory, applied;

**Methods:** M1: -explanation; M2- comparison; M3-demonstration; M4 - discovery learning; M5-experimentation



**Evaluation:**

**informative:** the acquisition of new knowledge about photographic filters and their principles of action

**formative:** correct use of specialized language; capacity for synthesis and analysis

**Objectives of the evaluation:**

Cognitive:

Oe1: operate with terms specific to photo filters

Training:

Oe2: compare different photo filters and use them using their principles of action

Oe3: identify the photographic principles according to which the photographic filters are made

Attitudinal:

Oe4: formulate opinions on how the use of photo filters helps to create some quality images

**Assessment tools:** oral verification; systematic observation of students by the tutor; individual and / or group project;

**Forms of organizing the activity: frontal, independent and in groups.**

**Resources:**

❖ **Materials:**

**Images**

→ Computer with high speed internet access and photo software

→ -Diagrams for the use of cameras and / or mobile devices that allow the editing of photos

→ - Digital tables

→ - Smart devices, cables and specific equipment

→ Specialized photo laboratory

**Resources: human: 20 students**

**time: 50 '**

**materials: official:** m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;  
m4 The manual;  
m5 Methodological guide;

**unofficial:** Worksheet

**Appendix 1**

### **FEED-BACK SHEET**

**I. Using a single photo filter, arrange a collage of six photos explaining the selectivity criteria of the chosen filter.**

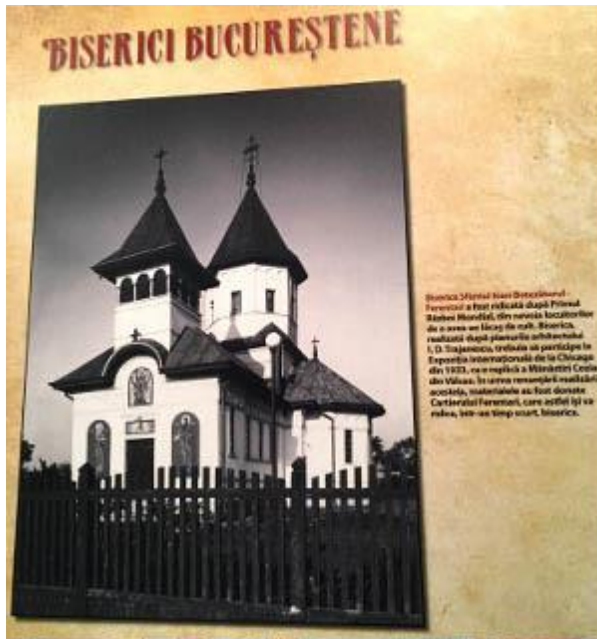
**Six photos were chosen in the presented image. Each was processed with either brightness, color, or desaturation, etc.**

**Working time: 20 minutes**

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## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Interpretation of reality. Photo filters (II)**

(Filters for black and white photography; Filters for color photography; Mixed-action filters)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Appropriate use of specific terminology and languages to explain photographic filters;
- Reporting the significant elements of the elements that make up the photographic filters and their component systems;
- Relation of the elements that make up the photo filters, examples, models.

**Specific skills:**

- Presentation, in writing and orally, of the defining aspects regarding the photographic filters and their utility, using correctly and coherently the terminology specific to the field;
- Explaining the types of photo filters through comparisons and suggested examples of images (predetermined / instantaneous, raw / processed);
- Interpret the types of filters to present some examples.

**Operational objectives:**

*Cognitive:*

- O1: define and use filter-specific terms: filters for black and white photography, filters for color photography, mixed-action filters;
- O2: define and use the types of filters for color photography: with mixed action, neutral density, polarization, other filters;
- O3: explain the influence of natural factors (light, twilight, darkness, sun, rain, etc.) in the use of photographic filters;
- O4: identify the use of filters in media production based on data provided by the Internet or encyclopedias, statistics;

*Training:*

- O5: to interpret on the basis of the bibliographic support (the manual) the information regarding the utility of the photographic filters;
- O6: analyze how photo filters are used;
- O7: compare a photo subject to processing by various filters;

*Attitudinal:*

- O8: to show interest in rendering reality through processed photography.

**Values and attitudes:**

- Demonstrate willingness to apply the knowledge gained about photo filters
- Identify the importance of knowing the types of photo filters and their usefulness

**Strategii:** dirijată, inductiv – deductivă, explicativ – conversativă.

**Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources: human:** 20 students

**time:** 50 '

**materials: official:** m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

**unofficial:** Worksheet

**Appendix 1**

**FEED-BACK SHEET**

**I.** The first image is the original photograph, a color photograph.

The other three are photo processing, with various filters, of the original image. Explain the differences in image and perception of the viewer as a result of the filters used.



The original photo



Unsaturated photography



Photo with light filter



Mixed filter photography - cubism



**Working time: 10 minutes**

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## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Light and color** (Nature of light; Visible spectrum; Photographic spectrum; White light; Color characteristics; Color perception; Color reproduction)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

1. Adequate use of specific terminology and languages to explain the nature of light;
2. Understanding the dual nature of wave light and the particle;
3. Recognition of the visible spectrum of white light and colors.

**Specific skills:**

- Recognition of colors in the visible spectrum and their nuances
- understanding the mechanism of color perception by the eyes
- defining the characteristics of colors
- ability to reproduce colors

**Operational objectives:**

**Cognitive:**

O1: to define light as a dual phenomenon

O2: to define light parameters: wavelength, period, frequency;

O3: identify the wavelengths of the colors in the visible spectrum

O4: to understand the decomposition of white light by dispersion

O5: to know the uses of infrared and ultraviolet radiation in the photographic spectrum:

**Training:**

O6: identify multiple shades of a color

O5: Recognize reflective media and transparent media that determine the brightness of colors

O6: to differentiate pure colors from those diluted with white light

O7: Recognize basic colors

O8: To reproduce chromatic patterns

**Attitudinal:**

O9: Interest in acquiring knowledge about light and color

**Values and attitudes:**

Manifestation of willingness to apply the knowledge gained about light and color

Identify the importance of knowing the characteristics of light and color

**Strategies:** directed, inductive - deductive, explanatory - conversational;

**Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;














**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

- Teaching plans
- Colored papers
- colored filters
- Computer with Internet access

**FEED-BACKSHEET**

Lungime de undă	Indice de refracție	Culoare
400	1.34451	
425	1.34235	
450	1.34055	
475	1.33903	
500	1.33772	
525	1.33659	
550	1.33560	
575	1.33472	
600	1.33393	
625	1.33322	
650	1.33257	
675	1.33197	
700	1.33141	

I. Based on the data in the table above, identify the range of wavelengths of shades of red or green.

II. Using colored filters, recompose various shades and complementary colors  
 Reproduce the RGA color model using green instead of yellow to identify the differences

**Working time: 10 minutes**

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## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Camcorder. Classical system (cinematographic film)** (Constructive characteristics; Constructive sketch of the camera; Classification of the cameras)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Appropriate use of specific terminology and languages for knowledge of the motion picture film camera;
- Understanding the principle of operation of the film camera;
- Recognition of types of cameras;

**Specific skills:**

- Knowledge of the component parts of the classic camera;

- Reproduction of the principle diagram of the camera based on the method of mechanical compensation;
- Defining compensation loops;
- Ability to differentiate the types of cameras according to different criteria.

### **Operational objectives:**

#### *Cognitive:*

- O1: define the classic camera;*
- O2: identify the component parts of the classic video camera;*
- O3: identify the component parts of the camera on the construction sketch;*
- O4: recognize the types of classic cameras;*

#### *Training:*

- O5: know how to mount the film between the two coils, so that the photosensitive layer is exposed to the action of light rays emerging from the lens;*
- O6: be able to sketch the principle diagram of the classic camera;*

#### *Attitudinal:*

- O7: show interest in acquiring knowledge about the classic camera.*

### **Values and attitudes:**

Manifestation of willingness to apply the knowledge gained about the classic camera  
Identify the importance of knowing the types of cameras

**Strategies:** directed, inductive - deductive, explanatory - conversational;

### **Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization



**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

## **FEED-BACK SHEET**

- I. Describe the constructive characteristics of the calcareous film camera.
- II. Draw the principle diagram of the classic camera based on the mechanical compensation method.
- III. List three types of cameras depending on the destination.

**Working time: 15 minutes**

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## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Camcorder - Digital.** (Camera - Digital - History; Constructive sketch of the camera in digital system; Advantages of using the digital system)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Appropriate use of specific terminology and languages for knowledge of digital video camera;
- Understanding the principle of operation of the digital video camera;
- Recognition of types of cameras;

**Specific skills:**

- Knowledge of the components of the digital video camera;
- Reproduction of the constructive sketch of the digital camera;
- Knowledge of existing zooms on video cameras;
- Know the advantages of using the digital system.

### **Operational objectives:**

#### *Cognitive:*

- O1: describe the characteristics of the digital video camera;*
- O2: identify the component parts of the digital video camera;*
- O3: identify the component parts of the digital camera on the drawing;*
- O4: Recognize the zoom types of camcorders;*

#### *Training:*

- O5: know how to film with a video camera;*
- O6: be able to sketch the construction diagram of the digital camera;*
- O7: know the role of each zoom*

#### *Attitudinal:*

- O8: show interest in acquiring knowledge about the digital video camera.*

### **Values and attitudes:**

Demonstrate a willingness to apply the knowledge gained about the digital camera

Identify the importance of knowing the components of digital cameras

### **Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

**Appendix 1**

**FEED-BACK SHEET**

- I. Describe the construction parts of the digital camera.
- II. Using optical zoom and digital zoom, make a two-minute movie.
- III. List three advantages of using the digital system.

**Working time: 15 minutes**

*Material made within the Erasmus + project:*

*RTV - KEY COMPETENCES IN MEDIA PRODUCTION FOR RADIO, FILM AND TELEVISION 2019-1-RO01-KA202-06397, with the financial support of the European Commission.*

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*Project: RTV - KEY COMPETENCES IN MEDIA PRODUCTION FOR RADIO, FILM AND TELEVISION*  
*Agreement number: 2019-1-R001-KA202-063974*

## **LESSON PLAN**

**Educational establishment:** MEDIA Technical College

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson:** *Reflexia și Refracția Luminii (Legile Reflexiei; Legile Refracției; Reflexia totală; Proprietățile reflexiei în cinematografie)*

**Lesson type:** **mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Appropriate use of specific terminology and languages to explain the laws of light reflection and refraction;
- Understanding the phenomena of reflection, refraction of light and total reflection;
- Recognizing the difference between reflection and refraction of light;
- Recognize the difference between reflection and total light reflection.

**Specific skills:**

- To use the properties of reflection in cinematography;
- Understanding the phenomena of reflection, refraction of light and total reflection;
- Defining reflection, refraction and total reflection;
- Ability to calculate the angle of incidence and the angle of refraction of the ray of light when switching from a medium with a given density to a medium with another density.
- To know the angle at which the light reflection becomes total (limit angle of the total reflection = refraction angle of  $90^0$ ).

**Operational objectives:**

*Cognitive:*

*O1: to define the reflection, refraction and total reflection of light;*

*O2: know how to use reflected light on transparent surfaces to achieve certain artistic effects;*

*O3: to identify the problems that appear in cinematography due to the appearance by reflection of some parasitic images or the reduction of the visibility of the basic image of the objects located beyond the transparent surfaces;*

*Training:*

*O4: recognize reflective and transparent media that determine the reflection and refraction of light;*

*O5: recognize the loss of light reflected on the surfaces of the lenses in contact with air, losses which lead to a decrease in the transparency of the objective;*

*O6: Recognize the transformation into diffuse light by successive reflection between lens surfaces*

*O7: use of reflected light on transparent surfaces to obtain artistic effects;*

*Attitudinal:*

*O8: show interest in acquiring knowledge about the reflection and refraction of light;*

*O9: show interest in applying knowledge about the properties of reflection in cinema.*

**Values and attitudes:**



Manifestation of willingness to apply the knowledge acquired about the reflection and refraction of light.  
Identifying the importance of knowing the properties of light reflection and applying them in photographic practice

**Strategies:** directed, inductive - deductive, explanatory - conversational;

### **Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

### **Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

## Appendix 1

### FEED-BACK SHEET

- I. Make a film with artistic effects obtained from light reflected from a transparent surface (glass, water, mirror).

**Working time: 20 minutes**

*Material made within the Erasmus + project:*

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## **LESSON PLAN**

**Educational establishment:** MEDIA Technical College

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Cinematographic film – I** (*Classification of films; Geometric dimensions; Latent image formation; Processing process*)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Appropriate use of terminology and specific languages for knowledge of cinematographic film;
- Understanding the principle of latent image formation;
- Understanding the process of transforming the latent image into a photographic image;
- Recognition of film types according to specific criteria.

**Specific skills:**

- Knowledge of the differences of photochemical processing of black and white films compared to color ones;
- Knowing the phases of the latent image formation process;
- Knowledge of the properties of the latent image;
- Know the standard dimensions of the cinematographic film.

### **Operational objectives:**

#### *Cognitive:*

*O1: to define the cinematographic film;*

*O2: define the latent image;*

*O3: to know the procedures for processing the cinematographic film;*

#### *Training:*

*O4: recognize the standard size film;*

*O5: to know the development principle of the cinematographic film;*

#### *Attitudinal:*

*O6: show interest in acquiring knowledge about film;*

*O7: to show interest in knowing the process of photochemical processing of cinematographic film.*

### **Values and attitudes:**

Manifestation of willingness to apply the knowledge gained about the film

Identify the importance of knowing the types of motion pictures

**Strategies:** directed, inductive - deductive, explanatory - conversational;

### **Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

**Appendix 1**

**FEED-BACK SHEET**

- I. List three criteria for classifying cinematographic films on perforated cell support.
- II. Choose the standard size movie from several types of movies.
- III. List the stages of photochemical processing of black and white films.

**Working time: 10 minutes**

*Material made within the Erasmus + project:*

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*Agreement number: 2019-1-R001-KA202-063974*

## **LESSON PLAN**

**Educational establishment:** MEDIA Technical College

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Cinematographic film – II** (*Film structure; The composition of the photosensitive layer; Support structure*)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Adequate use of terminology and specific languages to know the structure of the film;
- Knowledge of the composition of the photosensitive layer;
- Knowledge of the support structure of the cinematographic film;

**Specific skills:**

- Knowledge of the differences between the structure of black and white film and the structure of color film;
- Knowledge of the elements of the photosensitive emulsion composition;

- Knowledge of the materials currently used in the manufacture of film supports;

**Operational objectives:**

*Cognitive:*

*O1: to know the structure of the black and white film;*

*O2: to know the structure of the color film;*

*O3: to know the composition of the photosensitive layer;*

*O4: to know the materials used in the manufacture of the cinematographic film support;*

*Training:*

*O5: to recognize the black and white film and the color film;*

*Attitudinal:*

*O6: show interest in acquiring knowledge about the structure of cinematographic film;*

*O7: show interest in acquiring knowledge about the composition of the photosensitive layer of the cinematographic film.*

**Values and attitudes:**

Manifestation of willingness to apply the knowledge gained about the film

Identify the importance of knowing the types of materials used in the structure of the film

**Strategies:** directed, inductive - deductive, explanatory - conversational;

**Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;



**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

**Appendix 1**

**FEED-BACK SHEET**

I. List the layers of color motion pictures.

II. Name elements that are part of the photosensitive layer.

**Working time: 10 minutes**

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*Agreement number: 2019-1-R001-KA202-063974*

## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Recording and playing back television images** (The notion of image; Visual perception - Motion perception;  
Equipment used inside the studio)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Adequate use of specific terminology and languages for recording and playing back television images;
- Understanding the notion of image;
- Understanding the role of visual perception of the image in television;

**Specific skills:**

- Defining the notion of image;
- Knowledge of how the video image is formed from a series of frames representing the successive positions of the moving object;
- Knowing the types of television studios by destination;
- Recognition of the equipment used inside the television studio.

### **Operational objectives:**

#### *Cognitive:*

- O1: to define the image;*
- O2: to define visual perception;*
- O3: identify the types of television studios by destination;*
- O4: identify the equipment used inside the television studio;*

#### *Training:*

- O5: know how to control the flow of images transmitted by studios to a television center;*
- O6: be able to project the images of the object so that the spectator perceives a moving image;*
- O7: to work with the equipment inside the television studio;*

#### *Attitudinal:*

- O8: show interest in acquiring knowledge about recording and playing back television images.*

### **Values and attitudes:**

Demonstrate a willingness to apply the knowledge gained about recording and playing back television images  
Identify the importance of knowing the equipment used inside the television studio

**Strategies:** directed, inductive - deductive, explanatory - conversational;

### **Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

**Appendix 1**

**FEED-BACK SHEET**

- I. List the types of television studios by destination.
- II. Name some necessary equipment in the television studio.
- III. Make a two-minute movie using the equipment in the TV studio.

**Working time: 15 minutes**

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*Agreement number: 2019-1-R001-KA202-063974*

## **LESSON PLAN**

**Educational establishment:** MEDIA Technical College

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Flash photography technique** (The need to use the flash; Usefulness in studio photography; Diffuser surfaces - Softbox / Umbrella)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Adequate use of terminology and specific languages to know the technique of flash photography;
- Knowing the types of flashes;
- Knowledge of diffuser surfaces.

**Specific skills:**

- Defining the flash;
- Knowing how to trigger flashes;
- Knowledge of the principle of operation of flashes;
- Understanding the role of the flash in studio photography;

### **Operational objectives:**

#### *Cognitive:*

- O1: to define the flash;*
- O2: identify the types of flashes;*
- O3: know how to fire flashes;*
- O4: to know the types of diffusing surfaces;*

#### *Training:*

- O5: identify flash models;*
- O6: identify situations in which the use of a flash is required;*
- O7: know how to use the flash in studio photography;*
- O8: know how to use diffuser surfaces in photography;*

#### *Attitudinal:*

- O9: show interest in acquiring knowledge about flash photography techniques.*

### **Values and attitudes:**

Manifestation of willingness to apply the knowledge gained about the technique of flash photography  
Identify the importance of knowing the types of flashes and how to trigger them

**Strategies:** directed, inductive - deductive, explanatory - conversational;

### **Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization



**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

**Appendix 1**

**FEED-BACK SHEET**

I. Take pictures of the same subject with flash and no flash in different lighting conditions. Compare the obtained images.

**Working time: 15 minutes**

*Material made within the Erasmus + project:*

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*Agreement number: 2019-1-R001-KA202-063974*

## **LESSON PLAN**

**Educational establishment:** MEDIA Technical College

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Frame lighting technique. Lighting styles.** (Main lighting elements; Normal style and Monotone style; Light-dark style; High-tone style)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Appropriate use of specific terminology and languages to know the lighting technique of the frame and lighting styles;
- Understanding the role of light to illuminate the frame of filmed / photographed scenes;
- Understanding the role of lighting styles in obtaining the desired dramatic effect;
- Recognize the types of lights used for lighting.

**Specific skills:**

- Knowledge of the types of lights used in lighting technology;
- Identifying lighting styles;
- Knowledge of the specifics of each lighting style;
- Ability to differentiate lighting styles.

### **Operational objectives:**

#### *Cognitive:*

- O1: to define the term light used in the lighting technique;*
- O2: to know the specificity of each type of light used in lighting;*
- O3: to know the specifics of each lighting style;*

#### *Training:*

- O4: recognize the types of light used in lighting technology;*
- O5: to recognize the styles of light used in the lighting technique;*
- O6: recreate a dramatic scene using certain types of lights (for example: light that mimics a ray of sunshine among the blinds of a window);*

#### *Attitudinal:*

- O7: show interest in acquiring knowledge about the technique of lighting the frame;*
- O8: show interest in acquiring knowledge about lighting styles.*

### **Values and attitudes:**

Manifestation of willingness to apply the knowledge gained about the technique of lighting the frame  
Identify the importance of knowing lighting styles

**Strategies:** directed, inductive - deductive, explanatory - conversational;

### **Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

**Appendix 1**

**FEED-BACK SHEET**

I. Reconstruct a dramatic scene that represents the flicker of the fire in the hearth using an effect light.

II. Describe the style of light-dark lighting.

III. Identify the differences between the normal style and the monotonous style.

**Working time: 20 minutes**

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## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Lighting sources and equipment** (Light sources; Classifications of luminaires: reflectors, projectors, smart lights, moving heads)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

General skills:

- **Appropriate use of specific terminology and languages to explain light sources and lighting fixtures;**
- **Understanding the differences between natural light sources and artificial light sources;**
- **Recognition of lighting devices;**
- **Understanding and recognizing the fields of use of luminaires.**

**Specific skills:**

- Defining each light source;
- Recognition of specific differences between natural and artificial light sources;
- Understanding the construction and operation of lighting fixtures;
- Ability to choose the right luminaire according to the filming for which they are used (interior or exterior scenery).

### **Operational objectives:**

#### *Cognitive:*

*O1: define each natural light source;*

*O2: define each source of artificial light used for indoor filming and outdoor filming;*

*O3: to identify the most important criteria that differentiate the lighting devices used in photo-video-cinematography;*

*O4: to know the use of each device and optical system used: reflectors, projectors, intelligent lights;*

#### *Training:*

*O5: identify each light source;*

*O6: recognize the field of use of each light source;*

*O7: to differentiate the luminaires used in photo-video-cinematography;*

*O8: be able to install and use lighting fixtures depending on indoor filming or outdoor scenery;*

#### *Attitudinal:*

*O9: Interest in distinguishing light sources and luminaires;*

*O10: Seriousness in applying the knowledge and skills acquired during the lesson.*

### **Values and attitudes:**

Demonstration of willingness to apply the knowledge gained about lighting devices used in photo-video-cinematography

Identifying the importance of choosing the right type of filming fixtures: indoor or outdoor

**Strategies:** directed, inductive - deductive, explanatory - conversational;

### **Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;



**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

**Appendix 1**

**FEED-BACK SHEET**

I. Using the supplied lighting sources, arrange a scene photographed or filmed from a certain angle.

**Working time: 10 minutes**

*Material made within the Erasmus + project:*

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*Agreement number: 2019-1-R001-KA202-063974*

## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: Device movements** (Dramatic use of device movements; Device movements with fixed station point; Device movements with mobile station point)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Adequate use of specific terminology and languages to know the movements of the device;
- Understanding the role of dramaturgical use of apparatus movements;
- Recognition of the types of apparatus movements (with fixed station point and with mobile station point).

**Specific skills:**

- Knowing the types of device movements from an artistic point of view;
- Knowledge of the movements of the device with a fixed station point;

- Knowledge of the movements of the device with a mobile station point;
- Ability to differentiate the types of movements of the device.

### **Operational objectives:**

#### *Cognitive:*

- O1: define zoom or zoom;*
- O2: to define the trans-trav motion;*
- O3: identify panning movements;*
- O4: identify traveling movements;*
- O5: recognize the role of filming cranes in performing complex movements;*

#### *Training:*

- O6: recognize the movements of the device that are outside the action;*
- O7: to recognize the movements of the device that are integrated into the action;*
- O8: to recognize the panning movements;*
- O9: recognize zoom movements;*
- O10: recognize traveling movements;*

#### *Attitudinal:*

- O11: show interest in acquiring knowledge about machine movements.*

### **Values and attitudes:**

Manifestation of willingness to apply the knowledge acquired about the movements of the device.

Identify the importance of knowing the types of movements of the device.

**Strategies:** directed, inductive - deductive, explanatory - conversational;

### **Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

**Appendix 1**

**FEED-BACK SHEET**

I. Describe the movements of the device from an artistic point of view.

- II. Identify the differences between fixed station point and mobile station point device movements.
- III. Make a movie with a unique effect by combining the zoom with the traveling movement (trans-trav).

**Working time: 20 minutes**

*Material made within the Erasmus + project:*

*RTV - KEY COMPETENCES IN MEDIA PRODUCTION FOR RADIO, FILM AND TELEVISION 2019-1-RO01-KA202-06397, with the financial support of the European Commission.*

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*Erasmus+ Key Action 2 Strategic Partnership in the VET field*  
*Project: RTV - KEY COMPETENCES IN MEDIA PRODUCTION FOR RADIO, FILM AND TELEVISION*  
*Agreement number: 2019-1-R001-KA202-063974*

## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: The digital image. Digital image processing** (Image sensors; Crop factor; Image processing software)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

**General skills:**

- Adequate use of specific terminology and languages to define digital cameras and their operation;
- Understanding the notion of image sensors;
- Recognition of receiver types;
- Understanding the notion of pixels and their role in color formation;
  - Understanding the notion of crop factor;
- Understanding the role of image editing / processing software.

**Specific skills:**

- Defining image sensors;
- Defining pixels;
- Defining image sensor receivers;
- Defining the crop factor;
- Crop factor calculation for each image sensor;
- Ability to choose image processing software according to editing needs.

**Operational objectives:***Cognitive:*

- O1: define image sensors;*
- O2: define pixels;*
- O3: identify the types of receptors;*
- O4: To define the crop factor;*
- O5: Calculate the crop factor;*
- O6: Know the use of each image sensor;*

*Training:*

- O7: identify each type of sensor according to the type of receivers;*
- O8: use digital image processing software to edit photos or movies;*

*Attitudinal:*

- O9: to show interest in knowing the particularities of the digital image;*
- O10: show seriousness in applying the knowledge and skills acquired during the lesson.*

**Values and attitudes:**

Interest in applying the acquired knowledge about digital image and digital image processing  
Identify the importance of choosing sensors for image quality

**Strategies:** directed, inductive - deductive, explanatory - conversational;

**Ways**



**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

**Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

**Appendix 1**

**FEED-BACK SHEET**

I. Using the supplied SLR and DSLR digital cameras, photograph the same scene or object and compare the quality of the two images.

II. Shoot with the SLR and DSLR digital cameras, a moving scene / object and compare the quality of the two images.

III. Upload a digital image to the supplied software and process the image by adding color filters, select and retain an item in the digital image.

**Working time: 15 minutes**

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## **LESSON PLAN**

**Educational establishment: MEDIA Technical College**

**Learning unit:**

**Teacher:**

**Classroom:**

**Date:**

**Lesson: 2D, 3D, 4D Cinema Projection** (Projection Equipment - Classic Film; Modern Projection Equipment - Video Projectors; 3D Projection - Stereoscopic Projection, Light Polarization; 4D Projection)

**Lesson type: mixed** (knowledge acquisition, systematization, practice and assessment of intellectual work skills) **and in hybrid system** (in addition to using appropriate equipment and face-to-face interaction requires the use of technologies for the act of teaching-learning online).

General skills:

- **Adequate use of specific terminology and languages to describe projectors;**
- **Understanding the differences between the types of projection devices: classic, modern, 3D, 4D;**
- **Recognition of the specific characteristics of each type of projection device: classic, modern, 3D, 4D;**
- **Identify each type of projection device.**

**Specific skills:**

- Understanding the role of the classic film projector;
- Understanding the operation of projection devices and the differences between them;
- Defining the characteristics of 3D and 4D projections;
- Understanding the phenomenon of light polarization and its role in 3D projection;
- Understanding the sensory effect superimposed on the auditory-visual experience in 4D projection;
- Recognition of the role of 3D and 4D glasses in receiving film messages.

**Operational objectives:***Cognitive:*

- O1: describe the operation of the classic film projection apparatus;*
- O2: identify how a video projector works;*
- O3: understand stereoscopic projection and the role of polarizing glasses;*
- O4: to define the phenomenon of light polarization;*
- O5: understand the role of light polarization in stereoscopic (3D) projection;*
- O6: identify the stimuli associated with the visual and auditory cues of the film in 4D projection;*

*Training:*

- O7: be able to use a classic film projector for film projection;*
- O8: be able to use a video projector;*
- O9: identify the types of 3D projection: panoramic projection, multi-screen projections, spherical projection, polycreeen;*
- O10: describe the stimuli used in 4D projection;*

*Attitudinal:*

- O11: show interest in acquiring knowledge about film projectors.*

**Values and attitudes:**

- Demonstration of willingness to apply the knowledge gained about film projectors
- Identifying the importance of knowing the characteristics of film projection devices

**Strategies:** directed, inductive - deductive, explanatory - conversational;

## **Ways**

**expository - heuristic:** M1 - explanation; M2 - heuristic conversation;

**interactive:** M3 - "learning through discovery"; M4 - demonstration; M5 - experimentation; M6 - comparison; M7 - brainstorming; M8 - problematization

**Assessment: informative** (notions and classifications regarding photographic lenses) **and formative** (acquisition of new knowledge about photographic lenses, correct use of specialized language, ability to synthesize and analyze, ability to use photographic lenses in a given context / application ).

**Assessment tools:** oral verification; systematic observation; individual and / or group project;

**Methods:** M1 - explanation; M2 - comparison; M3 - demonstration; M4 - discovery learning; M5 - experimentation

**Forms of organizing the activity:** frontal, independent and in groups.

## **Material resources:**

Camera, photo software

Photographic lenses of different types

Computer with high speed internet access

Schemes of use of cameras

Digital table

Specialized laboratory

**Resources:** human: 20 students

time: 50 '

materials: official: m1 Curriculum for the respective subject (Photography);

m2 Didactic macro-design;

m3 Design of learning units and laboratories;

m4 The manual;

m5 Methodological guide;

unofficial: Worksheet

## **FEED-BACK SHEET**

I. Identify the types of projectors using the pictures on the teaching materials.

II. Use the projectors in the lab to present a movie (attaching the movie to a classic movie projector and projecting images on a screen or inserting the tape into a video projector and projecting the image onto a projection screen).

**Working time: 20 minutes**

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