

**COURSE DATA****Data Subject**

Code	33427
Name	Photography theory and techniques
Cycle	Grade
ECTS Credits	6.0
Academic year	2021 - 2022

Study (s)

Degree	Center	Acad. year	Period
1301 - Degree in Audiovisual Communication	Faculty of Philology, Translation and Communication	1	First term

Subject-matter

Degree	Subject-matter	Character
1301 - Degree in Audiovisual Communication	13 - Audiovisual technologies	Obligatory

Coordination

Name	Department
RENARD ALVAREZ, SANTIAGO	340 - Language Theory and Communication Sciences

SUMMARY

In the lectures the essential concepts on this subject will be explained:

- Basic concepts of optics: nature and properties of light, composition of the visible spectrum, reflection, diffraction and refraction, different types of lenses and objectives, its characteristics and properties.
- Fundamentals of the photographic image: image formation in the camera obscura, pinhole focused image, depth of field, conjugated distances.
- Photo-sensitive materials: chemical photography, silver halide and processing; digital photography: electronic sensors, processors, different types of digital files.
- The photographic camera, types and formats

-Introduction to the history of photography: although there is no place here for a discipline such as history itself, the beginnings of the invention and its first steps of evolution will be explained.



-Theoretical reflection on the role of photography as a specific means of expression in the universe of contemporary communication. We will resort to an already long tradition of semiotic studies on this subject in order to understand the status of photography as a very special type of sign and its relationship with concepts such as art, reality, convention, truth, lie, intention or manipulation.

In the practical lessons, developed in the Audiovisual Workshops, students will learn and develop the use of digital SLR cameras and computer processing of digital images in various formats, primarily Raw, JPEG, TIFF and PSD.

They will experience with various motifs and genres, especially portrait, capturing moving objects, the range of different focal lengths and creative photography.

They will put to work various techniques involving processing and manipulation of light and colour. They will make photomontages and experiment with different types of lighting, primarily natural light in various situations (using manual adjustment of the parameters of aperture, exposure time and sensitivity) and will have the opportunity to practise artificial lighting with the electronic flashes from the photo studio.

In the architecture workshop, they will also be able to check the properties and operation of the large format camera, although their assessable photographic exercises will be done exclusively with digital SLR cameras (APS-C).

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

Not required

OUTCOMES

1301 - Degree in Audiovisual Communication

- The development of the necessary skills in the field of audiovisual communication to proceed to further postgraduate studies and professional recycling.
- Knowledge of the different languages, codes and representation methods of the different technological and audiovisual media: photography, cinema, radio, television, video and electronic image, the Internet, etc. through their aesthetic and industrial proposals and their evolution over the years, which should generate a capacity to analyse audiovisual narratives and works, taking into account iconic messages such as the texts and products of the socio-political and cultural conditions of a given historic era.



- Theoretical and practical knowledge of technologies applied to audiovisual media (photography, radio, sound, television, video, cinema, and multimedia supports), including the ability to use them in the construction and handling of the different products involved in the field of audiovisual communication.
- Knowledge of spatial imagery and iconic representations in space, both in still and moving images, as well as the elements involved in art direction. The ability to analyse and plan the relationships between images and sounds from an aesthetic and narrative viewpoint in the different audiovisual supports and technologies. The ability to apply image composition techniques and procedures to the different audiovisual supports, based on knowledge of the classical laws and aesthetic and cultural movements of the history of the image by means of the new communication technologies. It also includes knowledge of the psychological models specifically developed for visual communication and persuasion by means of the image.
- Theoretical and practical knowledge of the scientific foundations of optics and the ability to take measurements connected with the amount of light and the chromatic quality during the image construction process, both in the professional field of photography and cinematography direction and other videographic productions.

LEARNING OUTCOMES

Students will have to know and be able to show their knowledge on the concepts detailed in the following section as the content of the subject, distributed in relevant thematic units.

Likewise they will have to be able to carry out all parts of the photographic process practically, from image planning to capture, followed by editing and image treatment until obtaining an entirely satisfactory final product.

For this, they will have the corresponding practical sessions in the Audiovisual Workshop, including in especial the management of digital SLR cameras, with exercises in order to master: correct lighting in the scene and capture, manually adjusting aperture settings, exposure time and sensitivity in conditions of natural and artificial lighting with flashes from the photo studio, portrait in both lighting conditions, photography of objects with different focal distance adjustment, capture of moving objects experimenting with different shutter speeds; experimenting with the frame as a means of expression both at the time of taking the picture and in post-production, free theme photography, computer image processing, varying the parameters of light, colour processing, cropping, filters, properties of different types of photographic documents and carrying out photomontages.

DESCRIPTION OF CONTENTS

1. A look at history. Origin and early development of photography.

Remote precedents of photography. "Camera obscura" and its uses since antiquity. Its irruption in Renaissance Europe and its influence on painting.

The discovery of the light that draws in the conjunction of three procedures: the silver halides, the convergent lens and the dark chamber. The invention of Niépce: capture, revealed and fixed. Heliographs, daguerreotypes, negatives, calotypes and other derivatives: evolution of the procedures in



the first years of photography.

The Maxwell procedure: color and RGB system.

2. The semiotic status of photography

Photography as an integrating part of the contemporary vision of the world.

Photography as a sign among all the human communication resources.

Peirce and types of signs. The long debate about photography as a sign and its relationship to the concepts of reality, truth, evidence and lie. The unredeemed power of the photographic image.

3. The light and its properties.

Electromagnetic energy. The visible spectrum and its composition. Perception of light and colours. The composition of white light. Natural and artificial sources. The colour temperature.

Interactions of light with matter: absorption, reflection, diffraction and refraction.

4. Cameras and objectives. The formation of the image.

The camera obscura. Pinhole image formation.

Converging and diverging lenses. Focus and focal length.

Formation of the focused image and its geometry. Focus range and depth of field. The conjugate distances.

Types of photographic lenses: characteristics and properties.

The camera. Different types and formats.

5. Fixing the image. Chemical and digital photography.

Silver halide photosensitive emulsions. Latent image, developer and fixer.

Black and white photography and color chemistry.

The electronic sensor and their types. Structure and function. Black and white and color systems.

The digital encoding of the image. Compression and file formats.

6. The lighting in photography and exposure parameters.

The lighting concept: definition, units and basic formulas.

Balancing exposure with the photographic camera:

-the aperture: the scale of f numbers and the effects of the various openings beyond the control of light

-exposure time or shutter speed

-sensitivity and its measurement systems

-adjusting the picture to the colour temperature of a given source (white balance)

Lighting as an expressive resource.

**7. Treatment and digital image manipulation.**

We will also see correction procedures or lighting retouching (under or overexposure), colour management, selection of areas, applying filters, processing layers, cropping, geometric transformations and deformations, and finally making photomontages.

8. Intentionality and photographic expression. Framing, composition and dynamics.

Photography as a result of an intentional act. Framing as the creation of an object differentiated from the nature it comes from.

The language of composition. Third dimension and dynamism: the flat still image overcomes its shortcomings. Elements suggesting volume, depth and motion in photography.

Beyond the sense of sight: synesthesia.

9. Genres and codes of photographic expression.

Beyond similarity: the portrait as a form of expression: face, eyes, body, pose and context.

The composition in landscapes and architectural photography. The value of contrast, perspective, power lines, dynamic elements.

The effect of different types of lenses in image perception: depth of field, distortion, distance perception. Intentionality and subjectivity in the photographic vision.

Emblematic examples of photojournalism: the violence, suffering, dramatic expression of a situation in an image.

Exploitation of sensuality and visual appeal in artistic photography and advertising.

Multiplicity of genres in scientific, geographic, institutional and family photography.

WORKLOAD

ACTIVITY	Hours	% To be attended
Laboratory practices	45,00	100
Theory classes	15,00	100
Attendance at events and external activities	5,00	0
Study and independent work	30,00	0
Readings supplementary material	25,00	0
Preparation of evaluation activities	15,00	0
Preparation of practical classes and problem	15,00	0
TOTAL	150,00	



TEACHING METHODOLOGY

Cancelled

EVALUATION

Please contact the teacher

REFERENCES

Basic

- DUBOIS, P. (1983) El acto fotográfico. Barcelona: Paidós, 2002.
- JAKOBSON, R. E., RAY, S. F., ATTRIDGE, G.G. & AXFORD, N.R. (2002) Manual de fotografía. Barcelona: Omega.
- PLASENCIA, Z. (2009) Fotografía digital. Madrid: Anaya.
- SOUGEZ, M. L. (1998) Historia de la fotografía. Madrid: Cátedra

Additional

- ABREU, C. (1998) Los géneros periodísticos fotográficos. Barcelona: CIMS.
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- SANTAELLA, L. & NÖTH, W. (2003) Imagen. Comunicación, semiótica y medios. Kassel: Reichenberger.
- SONTAG, S. (1973) Sobre la fotografía. Barcelona: Edhasa.
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ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

English version is not available