Course guide
804391 - TCI - Image Capture Techniques

Last modified: 18/03/2025

Unit in charge: Image Processing and Multimedia Technology Centre
Teaching unit: 804 - CITM - Image Processing and Multimedia Technology Centre.

Degree: BACHELOR'S DEGREE IN DESIGN, ANIMATION AND DIGITAL ART (Syllabus 2023). (Compulsory subject).

Academic year: 2025 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: Martínez Navarro, Beatriz

Others: Bigas Tañà, Miquel

TEACHING METHODOLOGY

It is planned to hold theoretical class sessions and practical sessions.
Theoretical class sessions are generally divided into four activity bands:
1. Resolution of doubts regarding the exercises proposed in the previous session.
2. Review of solved exercises.
3. Explanation of new contents.
4. Explanation of the next exercise and complementary materials.

These activity bands are modulated according to the complexity of the exercises and the corresponding contents.

In addition, the contents of the first half of the subject will be taught using the difficulty-based learning methodology.

LEARNING OBJECTIVES OF THE SUBJECT

- Identify the characteristics of the various image capture instruments and relate them to the needs of a specific assignment, with the aim of optimizing resources and the result obtained.
- Correctly apply camera and lighting settings to adapt to different situations and requirements of a photographic or audiovisual production.
- Plan the most appropriate workflow in the different phases of the structure of a photographic or audiovisual production.

STUDY LOAD

Type	Hours	Percentage
Hours medium group	18,0	12.00
Self study	90,0	60.00
Guided activities	12,0	8.00
Hours large group	30,0	20.00

Total learning time: 150 h

CONTENTS

Topic 1 - Introduction to photographic techniques

Description:
- Concept of image structure
- Photographic image formation
- Technique and communication

Full-or-part-time: 5h
Theory classes: 2h
Self study : 3h

Topic 2 - Photographic technics

Description:
- Formation of the photographic image: optical system and recording
- Camera adjustments
- Point of view and translation of the form
- Depth of field
- Motion capture

Related activities:
Exercises 1 to 3

Full-or-part-time: 35h
Theory classes: 7h
Practical classes: 7h
Self study : 21h

Topic 3 - Image capture equipments

Description:
- Types of cameras
- The digital sensor
- Types of objectives
- RAW format and its processing

Related activities:
Exercises 1 to 4

Full-or-part-time: 15h
Theory classes: 6h
Self study : 9h

Topic 4 - Introduction to Image Quality

Description:
- Image Quality Concept
- Image quality attributes
- Assessment of the quality of an image
- Capture equipment and image quality
- Processing tools for optimization
- Color Management

Related activities:
Exercise 4

Full-or-part-time: 15h
Theory classes: 6h
Self study : 9h

Topic 5 - Pre-production and production for photomontage and CGI integration

Description:
- Photomontage preproduction
- Photomontage production
- Postproduction in photomontage
- Photography and CGI integration - Composition

Related activities:
Final Project

Full-or-part-time: 15h
Theory classes: 6h
Self study : 9h

Topic 6 - Capture of moving image

Description:
- The moving image: difference between film and video
- Camera adjustments for film and video
- Camera movements
- Image quality in motion
- Formats and compression systems

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

Topic 7 - Advanced photographic techniques

Description:
- HDR image: applications, capture and processing
- Panoramas and 360º images: applications, capture and processing
- Stereoscopy
- Photogrammetry: applications, capture and processing

Related activities:
Final Project

Full-or-part-time: 40h
Theory classes: 12h
Guided activities: 4h
Self study : 24h

ACTIVITIES

Exercises 1 to 3

Description:
They will consist of the creation of images that will pose challenges based on the content on photographic technique and capture equipment that will be worked on in the subject. There will be a practical part that will be worked on set, in groups, and a part of independent work and individual reflection. These challenges will be set with a difficulty-based learning approach, so some will be achievable and some will not.

Specific objectives:
Apply the concepts worked on in topics 1, 2 and 3

Full-or-part-time: 20h
Self study: 12h
Guided activities: 8h

Projecte Final

Description:
A project will be carried out that will consist of the creation of images resulting from the integration of photographs and CGI images. In the process, it will be necessary to apply the advanced photographic techniques worked on in topic 7.

Specific objectives:
Work in an integrated way with the contents taught in the subject and know how to apply them correctly in the structure of the production.

Full-or-part-time: 25h 40m
Self study: 1h
Guided activities: 24h 40m

GRADING SYSTEM

The final mark of the subject will be calculated from the following exams and exercises, applying their corresponding weightings:
- 4 practical exercises - 40% (P01-10%, P02-10%, P03-10%, P04-10%)
- 1 Partial Exam - 15%
- 1 Final Project - 35%
- Participation and learning attitude - 10%

Students who do not pass the subject through continuous assessment may sit the reassessment exam, provided they do not have a NP qualification. In this exam, the grades corresponding to the partial exam and the report of the final work (25% of the subject) will be reassessed.

Irregular actions that can lead to a significant variation in the grade of one or more students constitute a fraudulent performance of an assessment act. This action entails the descriptive qualification of suspension and a numerical grade of 0 in the overall ordinary assessment of the subject, without the right to re-evaluation.

If the teachers have indications of the use of AI tools not allowed in the assessment tests, they can call the students involved to an oral test or a meeting to verify their authorship.

EXAMINATION RULES.

The practice exercises are explained and started during class time and are completed outside of the scheduled class time following the instructions given in the corresponding Practice Sheet document and the instructions given for that purpose 'have given in the part of the corresponding class.
The practical exercises will be delivered using the delivery space of the subject's classroom in the Virtual Campus, following the instructions described in the corresponding Practice Sheet document and following the indicated deadlines. Practices submitted after the deadline will not be accepted. The correct management of the documentation provided is an aspect related to the skills to be acquired and is, therefore, subject to evaluation.
The evaluation of the practices does not only entail the resolution of the proposed exercises, but also the defense of the results when the student is required to do so at the beginning of the classes.
Any incident that does not allow the practice to be resolved within the indicated period will be communicated to the corresponding teacher by means of a message via the Virtual Campus; after this communication, the pertinence or not of any cause that motivates the non-presentation of the exercise will be resolved and the alternatives will be established to complete the evaluation if the causes are justified. The reasons for non-presentation of exercises that are communicated to the teaching staff by the Head of Studies will also be considered justified.

BIBLIOGRAPHY

Basic:
- Jacobson, R. E. Manual de fotografía : fotografía e imagen digital . 9a ed. Barcelona : Omega, 2002. ISBN 8428212813.
- Davies, Adrian; Fennessy, Phil. Electronic imaging for photographers . 2nd ed. Oxford : Focal Press, 1996. ISBN 0240514416.
- Freeman, Michael. The photographer's eye. Focal Press, 2013.
- Fulford, Jason & Halpern, Gregory. The photographer's playbook. Aperture, 2014.
- Mercado, Gustavo. The filmmaker's eye.
- Ray, Sidney F. Applied photographic optics : lenses and optical systems for photography, film, video and electronic imaging . 2nd ed. Oxford [etc.] : Focal Press, 1994. ISBN 0240513509.
- Alton, John. Painting with light. University of California Press, 1995.
- Cox, Arthur. Óptica fotográfica : un enfoque moderno de la técnica de la definición . Barcelona : Omega, 1979. ISBN 8428205590.
- Pirenne, M.H. Óptica, perspectiva, visión en la pintura, arquitectura y fotografía. Buenos Aires: Víctor Leru, 1974.