

Academic Year: 2025/26

201910 - 3D Infography 2

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Teaching Guide Information

Subject code: 201910

Degree program: 10013 - Degree in Audiovisual Communication

Type: Compulsory

Year: 3

Number of ECTS: 6.0

Period: Second term

Languages:

Lecture-based teaching: Group 101: Spanish

Grade record: Group 1: Spanish

Degree coordination: Ana María González Neira

Subject coordination: Guillermo Franganillo Parrado

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1. Overview

Infografía 3D 2 delves into the technical and expressive aspects of lighting and rendering in 3D environments. Throughout the course, students will learn to use the different types of lights available in Maya/Arnold, master scenic lighting techniques and understand the basics of shading and materials. The course also includes theoretical content on colour spaces, as well as an introduction to layer rendering, the use of AOVs and the final composition of the image. The aim is to provide students with advanced tools to optimise visual quality and technical control in digital productions with a professional approach.

2. Educational and learning outcomes (RD 822/2021 degree programs) or competences (RD 1393/2007 degree programs)

Competences (RD 1393/2007 degree programs)

- [A01] Comunicar mensaxes audiovisuais.
- [A02] Crear produtos audiovisuais.
- [A03] Xestionar proxectos audiovisuais.
- [A04] Investigar e analizar a comunicación audiovisual.
- [A07] Coñecer as técnicas de creación e produción audiovisual.
- [A08] Coñecer a tecnoloxía audiovisual.
- [A11] Coñecer as metodoloxías de investigación e análise.

- **[A12]** Coñecer os principais códigos da mensaxe audiovisual.
- **[B02]** Que os estudantes saiban aplicar os seus coñecementos ao seu traballo ou vocación dun xeito profesional e posúan as competencias que adoitan amosarse por medio da elaboración e defensa de argumentos e a resolución de problemas dentro da súa área de estudo.
- **[B04]** Que os estudantes poidan transmitir información, ideas, problemas e solucións a un público tanto especializado como non especializado
- **[B05]** Que os estudantes desenvolvesen aquelas habilidades de aprendizaxe precisas para emprender estudos posteriores cun alto grao de autonomía
- **[B06]** Expresarse correctamente tanto de xeito oral como escrito en linguas oficiais da comunidade autónoma
- **[B08]** Empregar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) precisas para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.
- **[B09]** Desenvolverse para o exercicio dunha cidadanía aberta, culta, crítica, comprometida e solidaria capaz de analizar a realidade, diagnosticar problemas, formular e imprantar solución baseadas no coñecemento e orientadas ao ben común
- **[C01]** Entender a importancia da cultura emprendedora e coñecer os medios ao alcance das persoas emprendedoras.
- **[C02]** Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.
- **[C03]** Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.
- **[C04]** Valorar a importancia que ten a investigación, innovación e o desenvolvemento tecnolóxico no avance socioeconómico e cultural da sociedade.

2.1. Learning outcomes (RD 1393/2007 degree programs)

Learning outcomes	Study programme competences / results		
Knowledge and application of lighting techniques, 3D camera configuration, use of different types of light sources, shadows and effects. Rendering process in the context of a production. Lighting of characters and objects, lighting of interior and exterior scenery. Adjustment of realistic materials.	A1 A2 A3 A4 A7 A8 A11 A12	B2 B4 B5 B6 B8 B9	C1 C2 C3 C4

3. Contents

Content unit	Description	Education and learning outcomes / competences	Teaching methodology and training activities	Assessment systems
Topic	Local lighting: Local lighting techniques. Types of lights and characteristics. Character lighting. Interior lighting. Exterior lighting.	A01, A02, A03, A04, A07, A08, A11, A12, B02, B04, B05, B08, B09, C03.		SEG16.
Topic	Shadows: Shadow generation techniques. Uses of shadows in a 3D production.	A01, A02, A03, A04, A07, A08, A11, A12, B02, B04, B05, B08, B09, C03.		SEG16.
Topic	Ray tracing: Description of the ray tracing technique. Shadows, reflections and refractions. Production issues and aspects.	A01, A02, A03, A04, A07, A08, A11, A12, B02, B04, B05, B08, B09, C03.		SEG16.

Content unit	Description	Education and learning outcomes / competences	Teaching methodologies and training activities	Assessment systems
Topic	Global illumination: Global illumination techniques. Ambient Occlusion. Photon Mapping. Final Gathering. Image Based Lighting (IBL) and HDR. Caustics. Subsurface scattering.	A01, A02, A03, A04, A07, A08, A11, A12, B02, B04, B05, B08, B09, C03.		SEG16.
Topic	Camera: Cameras in 3D computer graphics. Simulation of the behavior of real cameras.	A01, A04, A08, A12, B02, B04, B08.		SEG16.
Topic	The rendering process: Description of the rendering process. Contour smoothing and texture filtering (aliasing and antialiasing). Render for compositing. Linear workflow. Render layers and AOVs.	A01, A02, A03, A04, A07, A08, A11, A12, B02, B04, B05, B06, B08, B09, C01, C02, C03, C04.		SEG16, SEG32.

4. Teaching methodologies and training activities

Modality In-person					
Methodology	Description	In-person teaching hours	Virtual teaching hours	Independent study hours	Education and learning outcomes / competences
Personalized attention [MAG00]	The tutorials will complement the workshops and theoretical classes, to solve individually or in small groups any doubts or difficulties that may arise during the study and non-classroom work of the students.	4,00	0,00	0,00	
Workshop [MAG16]	Laboratory work, problem solving applying the concepts studied in the theory on a 3D digital content creation software.	26,00	0,00	40,00	A01, A02, A03, A04, A07, A08, A11, A12, B02, B04, B05, B06, B08, B09, C02, C03, C04.
Mixed objective/subjective test [MAG32]	Theoretical and practical examination.	4,00	0,00	0,00	A02, A04, A07, A08, A11, B04, B05, B06, B09.
Guest lecture / keynote speech [MAG39]	Oral presentation complemented with the use of audiovisual media and the introduction of some questions directed to the students, with the purpose of transmitting knowledge and facilitating learning.	26,00	0,00	50,00	A01, A02, A03, A04, A07, A08, A11, A12, B02, B04, B05, B06, B08, B09, C01, C02, C03, C04.
Sum of hours by type		60,00	0,00	90,00	
Total hours				150,00	

5. Assessment

Modality In-person			
Assessment system	Description	Weighting (%)	Education and learning outcomes / competences
Workshop [SEG16]	Practical work	70,00	A01, A02, A03, A04, A07, A08, A11, A12, B02, B04, B05, B06, B08, B09, C02, C03, C04.
Mixed objective/subjective test [SEG32]	Practical and theoretical exam.	30,00	A02, A04, A07, A08, A11, B04, B05, B06, B09.
Total (%)		100,00	

All aspects related to academic exemption, study dedication, retention, and academic fraud will be governed in accordance with the current [academic regulations](#) of the UDC.

5.1. First opportunity

The evaluation of the subject will consist of the completion of practices carried out throughout the term (70% of the final grade) as well as the completion of a theoretical / practical exam (30%).

The competences, delivery dates and evaluation criteria to be developed in each test will be previously notified in class and will be published in the Virtual Campus throughout the term.

Implications for plagiarism:

The fraudulent performance of tests or evaluation activities, once verified, will directly imply the grade of failure in the call in which it is committed: the student will be graded with "suspense" (numerical grade 0) in the corresponding call of the academic year, whether the commission of the fault occurs in the first opportunity or in the second. For this, the following will be done

5.2. Second opportunity

In addition to taking the second chance exam, those who have failed or undelivered internships must retake them and deliver them by the same day of the second chance exam.

5.3. Early opportunity

In the advanced opportunity, students must deliver all the practices corresponding to the four-month period before the date set for the exam of such convocation.

Delivering these practices is a prerequisite for taking the exam, which is the final evaluation test.

Both the practical work and the exam will contribute to the final grade.

5.4. Academic exemption

Students with part-time enrollment or with academic dispensation of exemption from teaching should contact the professors of the subject to enable the flexibility of delivery dates, non-attendance monitoring of the subject or virtual tutoring.

The fraudulent performance of tests or evaluation activities, once verified, will directly involve the grade of failure in the call in which the infraction is committed: the student will be graded with "fail" (numerical qualification 0) in the corresponding call of the academic year, whether the infraction is committed in the first opportunity as in the second. To this end, his/her grade will be modified in the report of the first opportunity, if necessary.

6. Recommended bibliography

Basic bibliography

- Birn, Jeremy (2006). Iluminación y render. Anaya Multimedia, Ed. 2007. Book. [\[URL\]](#)
- Birn, Jeremy. (2014). [Digital] lighting and rendering. New Riders, 3rd edition.. Book. [\[URL\]](#)
- Brown, Tim H. (2007). The art of Maya : an introduction to 3D computer graphics. Autodesk, 4th ed.. Book. [\[URL\]](#)
- Cantor, Jeremy., Valencia, Pepe. (2004). Inspired 3D short film production. Thomson. Book. [\[URL\]](#)
- Demers, Owen. (2001). Digital texturing & painting. New Riders. Book. [\[URL\]](#)
- Katatikarn, Jasmine, autor, Tanzillo, Michael, autor (2020). Lighting for animation : the art of visual storytelling. CRC Press Taylor & Francis Group A Focal Press Book. Book. [\[URL\]](#)
- Rodríguez Rodríguez, Alberto (2010). Proyectos de animación 3D. Anaya Multimedia. Book. [\[URL\]](#)
- Schaefer, Dennis., Salvato, Larry. (1990). Maestros de la luz conversaciones con directores de fotografía. Plot. Book. [\[URL\]](#)

- Wissler, Virginia Bowman (2013). Illuminated Pixels : The Why, What, and How of Digital Lighting. Cengage Learning. Book. [\[URL\]](#)

Supplementary bibliography

- Alton, John. (2013). Painting with light. California University Press. Book. [\[URL\]](#)
- Freeman, Michael. (2010). Guía completa de luz e iluminación en fotografía digital. Blume. Book. [\[URL\]](#)
- Kerlow, Isaac V. (2009). The art of 3D computer animation and effects. John Wiley & Sons, 4th ed.. Book. [\[URL\]](#)

7. Recommendations

Subjects recommended to have taken previously

Dirección de Fotografía: Cámara e Iluminación / 616G01022

Teoría y práctica de la edición y el montaje / 616G01023

Infografía 3D-1 / 616G01024

Diseño de Producción y Dirección Artística / 616G01025

Subjects that continue the curriculum

Posproducción digital / 616G01031

Animación 3D-1 / 616G01032

Animación 3D-2 / 616G01033

Efectos especiales en animación / 616G01040