UNIVERSIDADE DA CORUÑA

Academic Year: 2025/26

201916 - 3D Animation 1

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Teaching Guide Information

Subject code: 201916

Degree program: 10013 - Degree in Audiovisual Communication

Type: Compulsory

Year: 4

Number of ECTS: 6.0

Period: First term

Languages:

Interactive teaching: Group 101: Spanish
Group 102: Spanish
Group 103: Spanish

Degree coordination: Ana María González Neira

Subject coordination: Viviana Barneche Naya

Faculty: Viviana Barneche Naya, Manuel Silva Díaz

1. Overview

This course introduces students to the fundamental concepts and techniques for animating three-dimensional objects. Students gain both theoretical knowledge and practical experience animating non-humanoid objects or characters, applying various established techniques.

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 productos audiovisuais.
- **[A04]** Investigar e analizar a comunicación audiovisual.
- **[A05]** Coñecelas teorías e a historia da comunicación audiovisual.
- **[A07]** Coñecelas técnicas de creación e produción audiovisual.
- **[A08]** Coñecela tecnoloxía audiovisual.
- **[A11]** Coñecelas metodoloxías de investigación e análise.

- **[A12]** Coñecelos principais códigos da mensaxe audiovisual.
- **[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.
- **[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		
Learn and effectively employ the core theoretical principles of animation and the digital tools necessary for animation.	A1 A2 A4 A5 A7 A8 A11 A12	B8	C2 C3 C4
Learn about character morphology and anatomy.	A2 A7 A11	B8	C2 C4

3. Contents

Content unit	Description	Education and learning outcomes / competences	Teaching methodologie and training activities	Assessment systems
Topic	Animation basic - Introduction to animation - Study and analysis of the 12 classic principles of animation - Analysis and application of classic principles to 3D animation - Animation Types: Traditional animation, 2D animation, stop-motion, motion graphics, 3D animation/CGI - Techniques: Keyframing, path animation, motion capture (mocap)	A01, A04, A05, A07, A08, A11, A12, C03, C04.		SEG16.
Topic	Introduction to Rigging - Hierarchies and grouping - Types of transformations - Constraints - Control creation - Joints - Inverse kinematics: calculation and solution types	A01, A02, A07, B08, C02, C03, C04.		SEG16.
Topic	Rigging-Skinning - Creation of a complete rigging system - Skinning: weights and influences	A01, A02, A07, A12, B08, C02, C03, C04.		SEG16, SEG42.
Topic	Character Design - Introduction - Artistic Anatomy: Osteology, myology, morphology - Anatomy in Animation: The skeleton - Canon and Proportion: History of canon - Canon within growth: proportionality	A01, A02, A07, A08, B08, C02, C03, C04.		SEG16, SEG42.

4. Teaching methodologies and training activities

Modality In-person

Methodology	Description	In-person teaching hours	Virtual teaching hours	Independer study hours	Education and earning outcomes / competences
Personalized attention [MAG00]	Hybrid personalized tutoring (in-person/online) to clarify theoretical concepts and assist in solving problems that arise during the completion of practical and supervised assignments. In the case of telepresence tutoring, Teams and email will be used for specific tutoring, while the Moodle forum will be used for general questions. For students with recognized part-time dedication and academic dispensation (exemption from attendance), there will be the possibility of tutoring for practical and supervised assignments via email.	0,00	0,00	2,00	
Workshop [MAG16]	In these classes, students will conduct a series of practical exercises related to the theoretical content presented, utilising computer tools under the supervision of the teacher.	24,00	0,00	24,00	A01, A02, A07, A08, B08, C02.
Guest lecture / keynote speech [MAG39]	The master sessions include the presentation of the theoretical content of each topic in the subject, as well as an explanation of how the software program used in it works.	24,00	0,00	0,00	A04, A05, A07, A08, A11, C03, C04.
Supervised projects [MAG42]	Throughout the semester, students will undertake an individual, supervised assignment in which they will apply the knowledge acquired during the course.	0,00	0,00	76,00	A01, A02, A07, A08, A12, B08, C02.
	Sum of hours by type	**48,00**	**0,00**	**102,00**	
			Total hours	**150,00**	

5. Assessment

Modality In-person			
Assessment system	**Description**	**Weighting (%)**	**Education and learning outcomes / competences**
Workshop [SEG16]	Students' performance will be evaluated through practical exercises and a series of quizzes directly related to the theoretical content covered in lectures. Submission of all practical assignments is mandatory to pass the course.	40,00	A01, A02, A07, A08, B08, C02.
Supervised projects [SEG42]	Evaluation of individual work and performance	60,00	A01, A02, A07, A08, A12, B08, C02.
	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

- To approve the course, it is necessary to submit all the practical assignments and the final project. The practical assignments completed during the course and the supervised project must achieve a qualification of at least 50% for each component.
- The practical assignments will be submitted through the Moodle platform according to the course schedule.
- For the first opportunity, you'll submit the supervised project through the Moodle platform, adhering to the requirements set by the instructors.

5.2. Second opportunity

- For the second opportunity, you'll need to resubmit any practical assignments for which you scored below 50% during the semester, along with the supervised project, via the Moodle platform, following the instructors' specified requirements.
- A minimum grade of 50% on both the practical assignments and the supervised project is required to pass the course. All practical assignments must be submitted via the Moodle platform.
- To pass the course, you must submit all practical assignments and the supervised project via the Moodle platform. This also applies to the early assessment period, and all submissions must adhere to the specified requirements and deadlines.

5.3. Early opportunity

To pass the course, you must submit all practical assignments and the supervised project via the Moodle platform, following the specified requirements and the deadline for the early assessment period. Both your practical assignments and the supervised project must receive a grade of 50% or higher.

5.4. Academic exemption

All aspects related to academic dispensations will be governed by the current academic regulations of UDC.

Students with either full-time dedication or an academic waiver must complete all practical work according to the previously agreed schedule with the faculty and submit the final project on the exam day in each session.

6. Recommended bibliography

Basic bibliography

- Briggs, Cheryl, autor (2021). Essential introduction to Maya character rigging. CRC Press, Second edition.. Book. [URL]
- Kerlow, Isaac V. (1996). The Art of 3-D computer animation and imaging. John Wiley & Sons. Book. [URL]
- Roy, Kenny, author. (2014). Finish your film! : tips and tricks for making an animated short in Maya. Bloomsbury Publishing (UK); Routledge, 1st edition. Book. [URL]
- Thomas, Frank., Johnston, Ollie. (1995). The illusion of life Disney animation. Disney Editions. Book. [URL]
- Whitaker, Harold., Sito, Tom; Halas, John. (2009). Timing for animation. Focal Press, [2nd ed.]. Book. [URL]
- Williams, Richard. (2009). The animator's survival kit. Faber and Faber, Expanded ed.. Book. [URL]

Supplementary bibliography

- Cantor, Jeremy., Valencia, Pepe. (2004). Inspired 3D short film production. Thomson. Book. [URL]
- Duran Castells, Jaume, Lasseter, John, dir. (2008). Toy Story : John Lasseter (1995). Octaedro; Nau Llibres. Book. [URL]
- Jones, Angie., Oliff, Jamie. (2008). Thinking animation : bridging the gap between 2D and CG. Thomson Course Technology. Book. [URL]
- Montgomery, Lee (2012). Tradigital Maya a CG animator's guide to applying the classic principles of animation. Focal Press. Book. [URL]
- Webster, Chris, 1954- (2005). Animation : the mechanics of motion. Focal Press. Book. [URL]
- Wyatt, Andy (2010). The Complete Digital Animation Course : Principles, Practices and Techniques: A Practical Guide for Aspiring Animators. Barron's Educational. Book. [URL]

7. Recommendations

- Recommended prior courses: 3D Infographics 1, 3D Infographics 2
- Recommended co-requisite courses: Digital Post-production
- Sequential courses: 3D Animation 2