

Academic Year: 2025/26

201982 - Animation 1

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Teaching Guide Information

Subject code: 201982

Degree program: 10014 - Degree in Digital Creation, Animation and Video Games

Type: Compulsory

Year: 1

Number of ECTS: 6.0

Period: Second term

Languages:

Degree coordination: Patricia Comesaña Comesaña

Subject coordination: Viviana Barneche Naya

Faculty: Viviana Barneche Naya

1. Overview

From the analysis of the 12 classical principles, the students will learn the essential concepts and techniques of animation. They will become acquainted with the fundamental technical aspects of movement. Furthermore, they will be able to create appropriate rigging systems in order to animate three-dimensional models.

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

Competences (RD 1393/2007 degree programs)

- **[A07]** CE7 - Ability to analyze and interpret shapes, forms, and movements from the real world or concept art to digitally recreate visual elements of an animation or video game.
- **[A10]** CE10 - Understanding the main stages of the animation or video game production pipeline and their significance in the overall process.
- **[A15]** CE15 - Knowledge, understanding, and application of artistic fundamentals, techniques, and methods necessary for creating and animating virtual characters and props.
- **[B01]** CB1 - That students have demonstrated possession and understanding of knowledge in a field of study that builds upon general secondary education and is typically at a level that, while supported by advanced textbooks, also includes some aspects involving knowledge from the forefront of their field of study.
- **[B02]** CB2 - That students know how to apply their knowledge to their work or vocation in a professional way and possess the competencies that are usually demonstrated through the preparation and defense of arguments and problem-solving within their field of study.

- **[B03]** CB3 - That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on relevant social, scientific, or ethical issues.
- **[B04]** CB4 - That students can communicate information, ideas, problems, and solutions to both specialized and non-specialized audiences.
- **[B05]** CB5 - That students have developed the learning skills necessary to undertake further studies with a high degree of autonomy.
- **[B06]** CG1 - Organizational and planning skills, especially in designing work aimed at creating the digital audiovisual content that forms part of an animation production or video game.
- **[B07]** CG2 - Ability to effectively solve problems, mainly of a technological nature, and in the field of creating interactive and animated digital content.
- **[B08]** CG3 - IT knowledge, especially regarding the use of state-of-the-art technologies and software within the field of study.
- **[B09]** CG4 - Knowledge of the procedures, skills, and methodologies required to adapt the creative process to digital media and to produce artistic works using specific technologies.
- **[B10]** CG5 - Critical evaluation of available knowledge, technology, and information for their application in problem-solving.
- **[B11]** CG6 - Critical and self-critical thinking skills, necessary in all creative processes that aim for a commitment to the quality of the work, outcomes, and proposed solutions.
- **[B12]** CG7 - Teamwork skills. Ability to tackle projects collaboratively with other students, assuming roles and fulfilling commitments to the group.
- **[B13]** CG8 - Ability to apply knowledge in practice, integrating the different parts of the program and connecting them in the development of complex products.
- **[C01]** CT1 - Correct oral and written expression in the official languages of the autonomous community.
- **[C03]** CT3 - Use of basic tools in information and communication technologies (ICT) necessary for professional practice and lifelong learning.
- **[C04]** CT4 - Development for the exercise of citizenship that respects democratic culture, human rights, and gender perspective.
- **[C06]** CT6 - Acquisition of life skills and healthy habits, routines, and lifestyles.
- **[C07]** CT7 - Ability to work in interdisciplinary or transdisciplinary teams, offering proposals that contribute to sustainable environmental, economic, political, and social development.
- **[C08]** CT8 - Appreciation of the importance of research, innovation, and technological development in the socio-economic and cultural advancement of society.
- **[C09]** CT9 - Ability to manage time and resources: develop plans, prioritize activities, identify critical tasks, set deadlines, and meet them.

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

Learning outcomes	Study programme competences		
To understand the fundamental concepts of 3D animation and the working methodology within a production environment.	A7 A10	B1 B3 B4 B5 B6 B9 B12	C1 C4 C6 C7 C8
Animate 3D characters by applying the 12 basic principles of animation.	A10 A15	B2 B4 B5 B6 B7 B8 B9 B10 B11 B13	C3 C8 C9
To become acquainted with the fundamental tools and techniques involved in the rigging process.	A7 A15	B2 B4 B5 B6 B7 B8	C3 C7 C9

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3. Contents

Content unit	Description	Education and learning outcomes / competences	Teaching methodologies and training activities	Assessment systems
Topic	Introduction to animation: - Study and analysis of the 12 classic principles of animation. - Adaptation of the classic principles and additional principles applied to 3D animation. - Elements and animatable features of a three-dimensional model. - Types of animation: traditional animation, 2D animation, stop-motion, motion graphics, 3D/CGI animation. - Animation techniques: using keyframing, trajectories, motion capture.	A07, A10, A15, B04, B05, B06, B07, B08, B09, B11, B13, C03, C08, C09.	MAG00, MAG16, MAG42.	SEG16, SEG42.
Topic	Introduction to rigging: - Basic concepts of rigging. - Hierarchies and groups. Joints. Controls and constraints. Deformers. - Forward and inverse kinematics. IK/FK setup. - Skinning: weights and influences.	A07, A10, A15, B04, B05, B06, B07, B08, B09, B11, B13, C01, C03, C08, C09.	MAG00, MAG16, MAG42.	SEG16, SEG42.
Topic	Real-time animation: - introduction - advantages of using a game engine in animation - tools	A07, A10, A15, B04, B05, B06, B07, B08, B09, B11, C03, C08, C09.	MAG00, MAG16, MAG42.	SEG16, SEG42.

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]	Personalized attention to clarify theoretical concepts and assist in solving problems that arise during the completion of practical work and the final project. In the case of remote tutoring, Teams and email will be used for specific tutorials, while the Moodle forum will be used for general queries. Students with recognised part-time dedication and academic dispensation (exemption from attendance) will have the opportunity for tutoring on practical work and supervision via Teams.	1,00	0,00	1,00	
Workshop [MAG16]	The workshop activity enables students to learn and consolidate the knowledge they have acquired. In these classes, students will conduct practical exercises related to the theoretical content presented, under the supervision of the teaching staff.	18,00	0,00	34,00	A07, A10, A15, B05, B06, B07, B08, B09, B10, B11, B13, C03, C09.

Methodology	Description	In-person teaching hours	Virtual teaching hours	Independent study hours	Education and learning outcomes / competences
Guest lecture / keynote speech [MAG39]	These sessions include the presentation of the theoretical content for each topic in the subject, as well as an explanation of the software program's functioning. These activities serve as the foundation for the remainder of the planned activities.	24,00	0,00	0,00	A07, A10, B02, B03, B04, B05, B10, B12, C01, C04, C06, C07, C08.
Supervised projects [MAG42]	The students will undertake an individual final project, applying all the knowledge acquired during the course. During this activity, progress will be monitored, and solutions will be provided for any issues that arise in completing the final project.	8,00	0,00	64,00	A07, A10, A15, B02, B03, B04, B05, B06, B07, B08, B09, B10, B11, B13, C03, C04, C06, C08, C09.
Sum of hours by type		51,00	0,00	99,00	
Total hours				150,00	

5. Assessment

Modality In-person			
Assessment system	Description	Weighting (%)	Education and learning outcomes / competences
Workshop [SEG16]	Assessment of the practical exercises related to the theoretical content presented. To approve the course, it is mandatory to submit all practical work.	30,00	A07, A10, A15, B05, B06, B07, B08, B09, B10, B11, B13, C03, C09.
Supervised projects [SEG42]	Evaluation of the final practical assignment.	70,00	A07, A10, A15, B02, B03, B04, B05, B06, B07, B08, B09, B10, B11, B13, C01, C03, C04, C06, C08, C09.
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 subject on the first opportunity, all practicals of the course and the final project must be submitted. The practicals completed during the course, as well as the supervised project, must achieve a grade of 50% or higher in each part.
- Practicals should be submitted via the Moodle platform according to the course schedule. The final project will be uploaded to Moodle on the day of the exam.

5.2. Second opportunity

To approve the subject on the second opportunity, the practicals whose grades were below 50% in the first opportunity must be resubmitted, along with the supervised work through the Moodle platform, according to the requirements indicated by the teaching staff.

5.3. Early opportunity

To approve the subject, all practical work and the supervised project need to be submitted through the Moodle

platform by the specified requirements and on the scheduled date for early assessment. To pass the subject, both the practical work and the supervised project must achieve a mark of 50% or higher for each part.

5.4. Academic exemption

The current academic regulations of UDC will govern all aspects related to academic exemptions.

Students with recognition of part-time dedication and academic exemption from attendance will need to submit all practical work according to the previously agreed-upon schedule with the teaching staff, and the final project on the day of the examination in each opportunity.

6. Recommended bibliography

Basic bibliography

- Kerlow, Isaac V. (1996). The Art of 3-D computer animation and imaging. John Wiley & Sons. Book. [\[URL\]](#)
- O'Hailey, Tina. (2013). Rig it right! : Maya animation rigging concepts. Focal Press. Book. [\[URL\]](#)
- Selby, Andrew (2013). La animación. Blume. Book. [\[URL\]](#)
- Thomas, Frank., Johnston, Ollie. (1995). The illusion of life Disney animation. Disney Editions. Book. [\[URL\]](#)
- Webster, Chris, 1954- (2005). Animation : the mechanics of motion. Focal Press. 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

- Cavalier, Stephen., autor (2011). The world history of animation. University of California Press. 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. [\[URL\]](#)
- Stanchfield, Walt, author., Hahn, Don, author. (2013). Drawn to life : 20 golden years of Disney master classes.. Bloomsbury Publishing (UK); Routledge, 1st edition. Book. [\[URL\]](#)
- Winder, Catherine; Dowlatabadi, Zahra (2020). Producing Animation. CRC Press. Book.
- Wyatt, Andy (2010). The Complete Digital Animation Course : Principles, Practices and Techniques: A Practical Guide for Aspiring Animators. Barron's Educational. Book. [\[URL\]](#)