

Curso 2021-22



Istituto Europeo di Design

Centro privado autorizado

GUÍA DOCENTE DE

Digital Thechnology. Communication

Título de Grado en
Enseñanzas Artísticas Superiores de Diseño

Especialidad de Diseño de Producto

Fecha de actualización: 1 de septiembre de 2026



Dirección General de Universidades y
Enseñanzas Artísticas Superiores
CONSEJERÍA DE CIENCIA, UNIVERSIDADES
E INNOVACIÓN

Título de Grado en Enseñanzas Artísticas Superiores de Diseño

Subject: Digital Technology. Communication (Tecnología digital. Comunicación)

1. COURSE IDENTIFICATION

Type	OEI-DPS	
Nature	Theory and Practice	
Specialisation / Pathway / Style / Instrument	Product and Service Design	
Subject Area	Materials and Technology Applied to Product Design	
Teaching Period	6th Semester	
Number of Credits	4 ECTS	
Number of Hours	Total: 120 hours	In-person: 72 hours
Minimum Number of Students Required for the Course to Run	-	
Department	Product Design Department	
Prerequisites	None	
Language(s) of Instruction	English	

2. COURSE COORDINATOR

Surname and Name	Email
Caraballo Llorente, Alejandro	campus IED

3. TEACHING STAFF AND GROUPS

Surname and Name	Email	Groups
Caraballo Llorente, Alejandro	campus IED	All

4. COMPETENCES

Transversal Competences
CTD1 Organise and plan work efficiently and effectively, fostering motivation.
CTD2 Gather relevant information, analyse and synthesise it, and manage it appropriately.
CTD3 Solve problems and make decisions in accordance with the objectives of the work being carried out.
CETD4 Use information and communication technologies efficiently.

CTD5 Understand and use at least one foreign language within the context of professional practice.

CTD6 Critically assess one's own professional and interpersonal performance.

CTD13 Pursue excellence and quality in professional practice.

CTD15 Work autonomously and recognise the importance of initiative and entrepreneurship in professional practice.

General Competences

CGD2 Master the languages and expressive resources of representation and communication.

CGD4 Develop a scientific understanding of the perception and behaviour of form, matter, space, movement and colour.

CGD11 Communicate ideas and projects to clients, present reasoned arguments, evaluate proposals and facilitate dialogue.

CGD17 Propose, evaluate and develop learning strategies appropriate to the achievement of personal and professional goals.

CGD18 Optimise the use of the resources required to achieve the intended objectives.

Specific Competences

CEP9 Master graphic and visual resources for two- and three-dimensional representation.

CEP10 Produce and communicate appropriate information relating to production.

CEP11 Understand communication technologies and their applications to product design.

CEP12 Master the specific digital technology associated with the development and execution of product design projects.

5. LEARNING OUTCOMES

- Apply assessment tools and develop the technical aspects of product design.
- Use digital technology applied to product design, both in project development and communication.
- Research and experiment with methods specific to the subject in order to support design decisions.
- Apply techniques for the graphic and interactive communication of the project.
- Acquire advanced skills in digital tools for the creation, visualisation and interpretation of images, renders and animations.
- Prepare the technical documentation required for product prototyping and production.
- Develop the skills required to fully develop a professional product, service and systems design project using digital technologies.

6. CONTENT

Thematic Block (if applicable)	Topic / Content
I. Animation for Product Design	Topic 1. Introduction. Principles of Animation.
	Topic 2. Configuración y organización del modelo para animación. Motores de renderizado
	Topic 3. Materials, Lighting and Environments
	Topic 4. Forward and Inverse Kinematics
	Topic 5. Camera Animation and Dynamic Presentation
	Topic 6. Physics Simulation
II. Post-production	Topic 7. Editing and Post-production
	Topic 8. Video Content Creation with Generative AI

7. STUDENT WORKLOAD PLANNING

Type of Activity	Total Hours
Theoretical Activities	15.5 hours
Practical Activities	13 hours
Other Compulsory Training Activities (workshops, seminars, etc.)	32 hours
Assessment Activities	11.5 hours
Student Independent Study	16 hours
Preparation of Practical Work	26 hours
Assessment Activities	6 hours
Total Student Workload	120 hours

8. METHODOLOGY

Theoretical Activities	The main teaching method used is the lecture, in which course content is presented and explained by the lecturer, supported by the use of Information and Communication Technologies (ICT). During these sessions, questions may be raised, doubts clarified, guidance provided on information research, and individual or group discussions encouraged. These sessions cover the course content through a three-way exchange of information (lecturer-student-student group), which is then developed into tangible exercises designed to form part of the practical activities. At the end of these sessions, a series of assignments or tasks is proposed for the student or group of students to develop during the practical activities.
Practical Activities	Advanced learning in 3D modelling, photorealistic rendering and animation is directly linked to the use of digital tools that enable these resources to be generated for the development and communication of a product design project. Practical sessions are therefore devoted to the applied learning of specialist software. During this activity, students complete practical exercises focused on specific weekly problem-based learning: an educational approach in which students work individually to find the information required to understand problems and develop solutions. In this case, the focus is on 3D modelling, advanced rendering, animation and their application to project communication, under the supervision of the lecturer.
Other Compulsory Training Activities (workshops, seminars, etc.)	Design Workshop: a teaching session aimed at reviewing and discussing the materials and topics presented in class. These sessions support the work undertaken throughout the course, allowing students or working groups to clarify questions and explore in greater depth the content covered in theoretical and/or practical activities.

9. ASSESSMENT AND GRADING CRITERIA AND METHODS

9.1. ASSESSMENT METHODS

Theoretical Activities	Students will be expected to participate in discussions held during theoretical sessions. A final test on the theoretical course content will be administered.
Practical Activities	Students will complete individual deliverables (practical problem-solving assignments) related to the course content. Specific submission requirements will be established for each deliverable.
Other Training Activities de carácter obligatorio (jornadas, seminarios, etc.)	Attendance and participation in the Design Workshop will be required.

9.2. ASSESSMENT CRITERIA

The following will be assessed:

- The use of digital technology applied to product design, both in project development and communication.
- The ability to research and experiment with methods specific to the subject in order to support design decisions.
- The application of techniques for the graphic and interactive communication of the project.
- The acquisition of advanced skills in digital tools for the creation, visualisation and interpretation of images, renders and animations.
- The preparation of the technical documentation required for product prototyping and production.
- The ability to fully develop a professional product, service and systems design project through the use of digital technologies.

Assessment must be designed and planned in such a way that it is integrated into teaching and learning activities.

Student assessment should be continuous, personalised and comprehensive:

- Continuous, as it is embedded within the teaching and learning process and is therefore not limited to specific dates or assessment situations.
- Personalised, as it must take into account each student's abilities, skills and attitudes. Particular attention will be paid to the student's participation in group work.
- Comprehensive, as it requires consideration of the general competences established for the programme through the objectives of the different thematic units and subject areas.

Students' learning will be assessed in relation to the achievement of the educational objectives established in the curriculum and associated with the general and specific objectives, taking the assessment criteria established for the subject area as the primary reference.

In order to assess the students' learning process, it is necessary to:

- Assess their curricular competence (abilities and aptitudes).
- Assess the factors that hinder or facilitate effective learning.
- Encourage student self-assessment and peer assessment as a means of analysing and critically reviewing results, allowing students to adjust their attitudes and approaches in order to improve.
- Assess the learning context in which the student develops their knowledge and skills.

Theoretical Activities	Participation in discussions held during the sessions. Final test on the theoretical course content.
Practical Activities	Completion and submission by the established deadline of the proposed practical problem-solving exercises related to the course content: • Assessment of the practical work carried out • Assessment of the conclusions or work presented
Other Compulsory Training Activities (workshops, seminars, etc.)	Attendance and participation in Design Workshop sessions.

9.3. GRADING CRITERIA

1. The assessment system used in this course follows a continuous assessment model.
2. Under the continuous assessment system, class attendance is compulsory, and students must attend at least 80% of the activities conducted in the presence of the lecturer.
3. Students who do not meet the requirements for continuous assessment must complete a specific submission for assessment without continuous assessment. This may include any components deemed appropriate, with their corresponding weightings specified in the relevant section of this course guide.
4. In all cases, students will have access to an extraordinary assessment opportunity, the structure, assessment methods and grading criteria of which are specified in this course guide.
5. To be eligible for continuous assessment, students must submit each and every practical assignment by the established deadline.

9.3.1. Weighting of Assessment Components for Continuous Assessment

Assessment Components	Weighting
Completion, presentation and submission of practical exercises	90%
Critical and well-reasoned participation in workshops, feedback sessions and discussions...	10%
Total	100%

9.3.2. Weighting of Assessment Components for Assessment without Continuous Assessment

Reasons why a student may lose the right to continuous assessment: failure to meet the compulsory class attendance requirement, set at a minimum of 80% of activities conducted in the presence of the lecturer.

Assessment Components	Weighting
Completion, presentation and submission of course practical exercises	60%
Completion of a Specific Assessment for Students Who Have Lost the Right to Continuous Assessment	40%
Total	100%

9.3.3. Weighting of Assessment Components for the Extraordinary Assessment

Assessment Components	Weighting
Completion, presentation and submission of course practical exercises	60%
Completion of a Specific Assessment for the Extraordinary Assessment	40%
Total	100%

9.3.4. Weighting for the Assessment of Students with Disabilities

Adaptations to assessment methods must take into account the different types of disability.

Assessment Components	Weighting
To be determined according to the student's specific needs.	

Total	100%
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10. SCHEDULE OF CONTENT, TEACHING METHODOLOGY AND ASSESSMENT

Session	CONTENT, ASSOCIATED TEACHING METHODOLOGY AND ASSESSMENT METHODS		Total hours	Total horas
			In-Person Hours	Independent Study Hours
Session 1	Topic 1. Introduction. Principles of Animation.			
	Theoretical Activities	Lecture covering the specific content of the section.	2.5 hour	3 hours
	Other Training Activities	Design Workshop	2 hours	

Session 2	Topic 2. Model Setup and Organisation for Animation. Rendering Engines			
	Theoretical Activities	Lecture covering the specific content of the section.	1 hour	1 hour
	Practical Activities	Completion of practical exercises	1 hour	2 hours
	Other Training Activities	Design Workshop	2 hours	
	Assessment	Review of practical work	0.5 hours	

Sessions 3 y 4	Topic 3. Subject Areal, Lighting and Environments			
	Theoretical Activities	Lecture covering the specific content of the section.	2 hours	2 hours
	Practical Activities	Completion of practical exercises	2 hours	4 hours
	Other Training Activities	Design Workshop	4 hours	
	Assessment	Review of practical work	1 hours	

Session 5	Topic 4. Forward and Inverse Kinematics			
	Theoretical Activities	Lecture covering the specific content of the section.	1 hour	1 hour

	Practical Activities	Completion of practical exercises	1 hour	2 hours
	Other Training Activities	Design Workshop	2 hours	
	Assessment	Review of practical work	0.5 hours	

Session 6	Topic 5. Camera Animation and Dynamic Presentation			
	Theoretical Activities	Lecture covering the specific content of the section.	1 hour	1 hour
	Practical Activities	Completion of practical exercises	1 hour	2 hours
	Other Training Activities	Design Workshop	2 hours	
	Assessment	Review of practical work	0.5 hours	

Sessions 7 y 8	Topic 6. Physics Simulation			
	Theoretical Activities	Lecture covering the specific content of the section.	2 hours	2 hours
	Practical Activities	Completion of practical exercises	2 hours	4 hours
	Other Training Activities	Design Workshop	4 hours	
	Assessment	Review of practical work	1 hours	

Session 9	Topic 7. Editing and Post-production			
	Theoretical Activities	Lecture covering the specific content of the section.	1 hour	1 hour
	Practical Activities	Completion of practical exercises	1 hour	2 hours
	Other Training Activities	Design Workshop	2 hours	
	Assessment	Review of practical work	0.5 hours	

Session 10, 11, 12, 13 y 14	Topic 8. Video Content Creation with Generative AI			
	Theoretical Activities	Lecture covering the specific content of the section.	5 hours	5 hours
	Practical Activities	Completion of practical exercises	5 hours	10 hours
	Other Training Activities	Design Workshop	10 hours	
	Assessment	Review of practical work	2.5 hours	

Session 15	Final Submission			
	Other Training Activities	Design Workshop	4 hours	
	Assessment	Continuous Assessment and Assessment without Continuous Assessment	2.5 hours	6 hours

Session 16	Grade Release, Feedback and Assessment			
	Assessment	Review and assessment of the final theory test and projects, and release of grades.	2.5 hours	

11. TEACHING RESOURCES AND MATERIALS

Teaching resources and materials available on the virtual campus for each thematic block:

- PDF files
- Explanatory videos
- Screen recordings captured from the lecturer's computer during selected sessions

In addition, the required specialist software will be available on the classroom computers.

11.1. General Bibliography

Title	Aprenda a crear personajes en Blender
Author	3dtotal Publishing
Publisher	Marcombo

Title	The Animator's Survival Kit
Author	Richard Williams
Publisher	Faber & Faber

11.2. Supplementary Bibliography

Title	Digital Lighting & Rendering: Third Edition
Author	Jeremy Birn
Publisher	New Riders; 3 edition (November 21, 2013)

11.3. Useful Websites

<https://www.blender.org/>

11.4. Other Teaching Materials and Resources

Rhinoceros	3D Modelling
Adobe Premiere	Editing and Post-production