Information about the course

Degree: Degree in Design and Narration in Animation and Video games

Faculty: Faculty of Legal, Economic and Social Sciences

Code: 2050433 **Name:** Post Production Visual Effects

Credits: 6,00 ECTS **Year:** 4 **Semester:** 1

Module: POSTPRODUCCIÓN

Subject Matter: ANIMACIÓN Y POSTPRODUCCIÓN. **Type:** Obligatoria

Branch of knowledge:

Department: Multimedia and Digital Arts

Type of learning: Classroom-based learning

Language/-s in which it is given: Spanish

Teachers:

2054A	Adrian Mantilla Pousa **(Profesor responsable)**		adrian.mantilla@ucv.es

Module organization

POSTPRODUCCIÓN

Subject Matter	ECTS	Subject	ECTS	Year/semester
ANIMACIÓN Y POSTPRODUCCIÓN.	24	2D Animation	6	3/1
		Motion Graphics	6	2/1
		Post Production Visual Effects	6	4/1
		Video and audio editing and compositing	6	3/2

Recommended knowledge

Recommended Technical Knowledge

·**Basic computer skills**: proficient file management, project organization, and software installation.

·**Video editing**: prior experience with software such as Adobe Premiere, DaVinci Resolve, or similar.

·**Digital imaging**: fundamentals of Adobe Photoshop or another editor for working with layers, masks, and color adjustments.

·**2D/3D animation concepts**: keyframes, interpolation, and scene composition.

·**Introductory 3D knowledge**: basic rendering and exporting of image sequences for compositing.

Recommended Artistic and Theoretical Knowledge

·**Audiovisual language**: framing, rhythm, and visual continuity.

·**Color and light theory**: integration of 3D and 2D elements within the same shot.

·**Basic visual storytelling**: understanding how effects support aesthetic and narrative discourse.

Attitude and Transferable Skills

·Ability to visually analyze and detect incorrect integration of an effect.

·Creativity in solving technical and artistic problems.

·Exploratory mindset with software (After Effects, Nuke, Houdini, etc.).

·Organizational skills: layer order, pre-compositions, file naming, and project structure.

Learning outcomes

At the end of the course, the student must demonstrate having acquired the following learning outcomes:

R18 - Use specific software for non-linear audio and video editing in animation or video projects for video games. RA5.3 / RA12.71

Learning outcomes of the specified title

Type of AR: Competencias

- Be able to convey information, ideas, problems, and solutions to both specialized and non-specialized audiences.

- Develop original and innovative ideas and proposals in the area of animation and video game design and storytelling, in the work required for a project, combining conceptual and technical aspects.

- Respect and implement the ethical principles and action proposals derived from the Sustainable Development Goals, applying them to all academic and professional activities.

R19 - Create original audiovisual effects that are aesthetically suited to the requirements of the projects developed in the course. RA9.37 / RA2.27

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Illustrate and generate specific animation and video game projects using traditional procedures and digital techniques

Type of AR: Competencias

- Be able to convey information, ideas, problems, and solutions to both specialized and non-specialized audiences.

- Develop original and innovative ideas and proposals in the area of animation and video game design and storytelling, in the work required for a project, combining conceptual and technical aspects.

- Develop theoretical and practical responses based on the sincere search for the full truth and the integration of all dimensions of the human being in response to life's major questions.

R20 - Use specific vocabulary related to visual effects editing and post-production in the development of projects for this subject. RA8.32 / RA4.21

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Demonstrate a high degree of autonomy in learning.

- Illustrate and generate specific animation and video game projects using traditional procedures and digital techniques

Type of AR: Competencias

- Be able to convey information, ideas, problems, and solutions to both specialized and non-specialized audiences.

- Collaborate in teams that adopt interdisciplinary roles in the development of animation and video game projects.

- Respect and implement the ethical principles and action proposals derived from the Sustainable Development Goals, applying them to all academic and professional activities.

R22 - Create the necessary resources to develop visual effects for video games. RA12.72

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Illustrate and generate specific animation and video game projects using traditional procedures and digital techniques

Type of AR: Competencias

- Apply the principles derived from the concept of integral ecology to their proposals or actions, regardless of their scope, area of knowledge, and the contexts in which they are presented.

- Be able to convey information, ideas, problems, and solutions to both specialized and non-specialized audiences.

- Correctly apply their knowledge to their work or vocation in a professional manner and be able to develop and defend arguments and solve problems within their area of study.

- Develop original and innovative ideas and proposals in the area of animation and video game design and storytelling, in the work required for a project, combining conceptual and technical aspects.

- Develop theoretical and practical responses based on the sincere search for the full truth and the integration of all dimensions of the human being in response to life's major questions.

- Respect and implement the ethical principles and action proposals derived from the Sustainable Development Goals, applying them to all academic and professional activities.

R23 - Develop three-dimensional elements and resources to be used in simulations or visual effects (smoke, dust, fluids, explosions, lens effects, etc.) for animation. RA12.73

Learning outcomes of the specified title

Type of AR: Competencias

- Develop theoretical and practical responses based on the sincere search for the full truth and the integration of all dimensions of the human being in response to life's major questions.

R24 - Apply special video and audio effects in animation and/or video projects for video games, taking into account the sincere search for the whole truth and the integration of all dimensions of the human being in the face of life's big questions, applying the principles derived from the concept of integral ecology and respecting and putting into practice the ethical principles and proposals for action derived from the sustainable development goals. RA12.74 / RA2.29 / RA6.26 / RA7.26 / RA8.33

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Illustrate and generate specific animation and video game projects using traditional procedures and digital techniques

Type of AR: Competencias

- Apply the principles derived from the concept of integral ecology to their proposals or actions, regardless of their scope, area of knowledge, and the contexts in which they are presented.

- Be able to convey information, ideas, problems, and solutions to both specialized and non-specialized audiences.

- Collaborate in teams that adopt interdisciplinary roles in the development of animation and video game projects.

- Correctly apply their knowledge to their work or vocation in a professional manner and be able to develop and defend arguments and solve problems within their area of study.

- Develop original and innovative ideas and proposals in the area of animation and video game design and storytelling, in the work required for a project, combining conceptual and technical aspects.

- Develop theoretical and practical responses based on the sincere search for the full truth and the integration of all dimensions of the human being in response to life's major questions.

Assessment system

In-person modality

Assessed learning outcomes	Granted percentage	Assessment tool
	60,00%	SE6 – Practical exams.
	40,00%	SE8 – Project development.

Observations

1.Submission of all practical and written test assignments is mandatory in order to carry out the final project of the course.

2.An oral defense of each project (when required by the professor) is mandatory for the project to be evaluated. The oral defense is considered part of each project, as it serves to assess the use of discipline-specific vocabulary.

3.Single evaluation is not permitted, given the daily tutoring and in-class work required in this subject.

4.All assignments must be submitted through the designated tasks in the course's virtual campus.

5.In cases where files exceed the platform's upload limit, students are required to submit via their institutional UCV OneDrive account, keeping the files available at least until the end of the current academic year. The professor may reject any submission that does not follow these instructions or fails to meet the established deadlines.

6.All files must be delivered in the formats specified by the professor (e.g., .mb, .ma, .fbx, .png, .pdf…), uncompressed unless expressly indicated. Failure to comply with this requirement may result in the work not being graded.

7.It is the sole responsibility of the student to ensure that files are correctly uploaded and accessible. Claims regarding corrupted, incomplete, or expired links will not be accepted afterwards.

8.Late submissions will not be accepted unless a justified and documented reason is provided. The professor may apply a grade penalty or directly reject the submission, depending on the case.

9.In addition to attendance, active participation in class is expected. Repeated lack of engagement may negatively affect the qualitative assessment of the student's performance.

10.Any evidence of plagiarism, copying, or unauthorized use of others' work will automatically result in a failing grade for the corresponding activity, and the provisions of the UCV Academic Integrity Regulations will apply.

11.The use of Artificial Intelligence in the creation of 3D models (obj, fbx, or others) is strictly prohibited. Except for specific uses that are documented and expressly authorized by the professor, the use of AI-based image generators is forbidden.

MENTION OF DISTINCTION:

The mention of "Honors" may be awarded to students who have obtained a grade equal to or greater than 9.0. Their number may not exceed five percent of the students enrolled in a group in the corresponding academic year, unless the number of students enrolled is lower.

Training activities

The methodologies to be used so that the students reach the expected learning outcomes will be the following:

M4 MD4: Problem-solving exercises

M6 MD6: Project-based learning

IN-CLASS TRAINING ACTIVITIES

ACTVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS
AF4 – Application of the theory learned in real or simulated situations.	R18, R19, R20, R21, R22, R23, R24	MD4: Problem-solving exercises	17,00	0,68
AF6 – The student, individually or collectively, focuses on producing a tangible final result (product) that incorporates the knowledge and skills necessary for its realization.	R18, R19, R20, R21, R22, R23, R24	MD4: Problem-solving exercises	43,00	1,72
TOTAL			**60,00**	**2,40**

TRAINING ACTIVITIES OF AUTONOMOUS WORK

ACTVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS
AF8 – Independent work. Study, memorization, exam preparation, practice of practical skills, preparation of assignments, essays, reflections, metacognitive activities, portfolio development, etc.	R18, R19, R20, R21, R22, R23, R24	MD6: Project-based learning	11,00	0,44
AF6 – The student, individually or collectively, focuses on producing a tangible final result (product) that incorporates the knowledge and skills necessary for its realization.	R18, R19, R20, R21, R22, R23, R24	MD6: Project-based learning	17,50	0,70
AF4 – Application of the theory learned in real or simulated situations.	R18, R19, R20, R21, R22, R23, R24	MD6: Project-based learning	61,50	2,46
TOTAL			**90,00**	**3,60**

Description of contents

Description of content necessary for the acquisition of learning outcomes.

Theoretical content:

Block of content	Contents
Block 1. Principles of Visual Effects in Interactive Environments with Unreal Engine 5	This block focuses on the fundamentals of creating real-time visual effects using *Unreal Engine 5*. It introduces the Niagara system for particles, simulations, and dynamics, as well as the integration of materials and lights to generate interactive effects. Emphasis is placed on applications in immersive environments, video games, and interactive experiences, with particular attention to real-time optimization.
Block 2. Procedural Generation of Visual Effects with Houdini	This block explores the use of *Houdini* as a procedural tool for generating visual effects. It covers physical simulations (fire, smoke, fluids, destruction, crowds) and their export for integration into different production pipelines. The focus is on understanding the procedural approach and its potential for creating complex and scalable effects.
Block 3. Techniques of Compositing and Postproduction of Visual Effects with After Effects	The final block addresses the compositing and postproduction of visual effects using *Adobe After Effects*. Students will work with techniques such as keying, rotoscoping, tracking, color correction, and the integration of 3D-generated elements. The emphasis is on achieving believable and narratively effective compositions that combine live-action footage with digital effects.

Temporary organization of learning:

Block of content	Sessions	Hours
Block 1. Principles of Visual Effects in Interactive Environments with Unreal Engine 5	10	20,00
Block 2. Procedural Generation of Visual Effects with Houdini	10	20,00
Block 3. Techniques of Compositing and Postproduction of Visual Effects with After Effects	10	20,00

References

Brinkmann, R. (2008). *The Art and Science of Digital Compositing* (2nd ed.). Morgan Kaufmann.

Sharma, A. (2022). *Unreal Engine 5 Beginner's Guide*. Packt.

Epic Games Documentation: https://docs.unrealengine.com

Okun, J. A., & Zwerman, S. (2010). *The VES Handbook of Visual Effects*. Focal Press.

Kerlow, I. (2019). *The Art of 3D Computer Animation and Effects* (5th ed.). Wiley.

Ferstl, F. (2021). *The Magic of Houdini*. New Riders.