



Universitat de Lleida

# DEGREE CURRICULUM **PC VIDEOGAMES**

Coordination: SEBE FEIXAS, FRANCISCO

Academic year 2023-24

## Subject's general information

<b>Subject name</b>	PC VIDEOGAMES			
<b>Code</b>	102084			
<b>Semester</b>	2nd Q(SEMESTER) CONTINUED EVALUATION			
<b>Typology</b>	Degree	Course	Character	Modality
	Bachelor's Degree in Digital Design and Creative Tehcnologies	3	OPTIONAL	Attendance-based
<b>Course number of credits (ECTS)</b>	6			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRALAB	TEORIA	
	<b>Number of credits</b>	3	3	
	<b>Number of groups</b>	1	1	
<b>Coordination</b>	SEBE FEIXAS, FRANCISCO			
<b>Department</b>	MATHEMATICS			
<b>Teaching load distribution between lectures and independent student work</b>	6 ECTS correspond to 150 work hours (60 in-class, 90 autonomous work)			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			
<b>Language</b>	Lectures given in Catalan.			
<b>Distribution of credits</b>	6 ECTS			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
SEBE FEIXAS, FRANCISCO	francesc.sebe@udl.cat	6	Arrange a meeting via e-mail

## Subject's extra information

Nowadays, there exist several platforms that facilitate videogame development. By using these tools, it is possible to manage the graphical elements of a game easily and program its behaviour by means of code. These platforms provide the tools to place and move objects, to manage the interaction among them, to add sound and all those things that may be required.

This year we will employ the Unity videogame creation platform.

## Learning objectives

- To know and be able to use the graphical interface of the Unity tool workspace for the development of 3D projects.
- To know and apply basic techniques for the creation, import, manipulation, animation and interaction among the elements that compose a videogame.
- To develop videogames based on the use of both organic and inorganic 3D models.
- To create the graphical interface of a 3D videogame.

## Competences

### Basic

- CB2. That students know how to apply their knowledge to their jobs and vocations in a professional way and that they possess the skills that are shown through the creation and support of arguments and the resolution of problems in their study area.

### General

- CG3. Skills to respond to contexts belonging to digital environments by recognizing physical, cognitive, cultural and social aspects that support design decisions.

### Specific

- CE6. To take the creation and modeling process of a 3D design for videogames, in all the phases that compose their lifecycle.
- CE9. To know the methodologies, programs, techniques, regulations and standards, and be able to use the acquired knowledge background with specific elements of web development.
- CE11. To know how to visualize and visually communicate information by mastering the 2D and 3D graphical expression techniques, knowing how to present the results according to aesthetic canons.

## Subject contents

1. Introduction to Unity
  - 1.1. Workspace
  - 1.2. Creation of objects, scripts and prefabs
  - 1.3. Object movement

- 1.4. Interaction among objects
- 1.5. Dynamic object creation
- 1.6. Sound effects
  
2. Working with inorganic models
  - 2.1. Model creation
  - 2.2. Model animation
  
3. Working with organic models
  - 3.1. Model import
  - 3.2. Model animation
  
4. Graphical interface
  - 4.1. Menu creation
  - 4.2. Head-up display (HUD) creation
  - 4.3. HUD - Game objects interaction

## Methodology

The subject will be given following a totally practical methodology. Students will develop various projects during the semester.

The work to be done is detailed in a set of documents that summarize the tasks to be done by students in order to complete each step of the different projects. These documents will be released regularly during the semester.

## Development plan

This year we will develop four small 3D videogame projects. It will be necessary to create or import the graphical elements and to program their movement and interaction with the rest of game elements.

The documents describing the assets to use and the work to do will be released weekly.

We will devote 25% class time to each project.

## Evaluation

The final mark will be computed from the submission of four projects:

1. Introduction to Unity (25%)
2. Creation and animation of an armoured vehicle (25%)
3. Import and animation of a human character (25%)
4. Graphical interface (25%)

Each project can only be submitted one time. Projects handed in after the deadling will gain, at most, 60% the maximum achievable mark. For this reason, continuous work and proper time management are mandatory.

The alternative evaluation of the subject requires the submission of the same activities. In this case, the deadline is extended until three labour days before the deadline for academic records.

## Bibliography

- Joseph Hocking. Unity in Action. Multiplatform game development in C#. Manning. 2015.
- Home of the Unity Project (<https://unity.com/>)