Information about the subject

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

Faculty: Faculty of Legal, Economic and Social Sciences

Code: 2050432 **Name:** Artificial intelligence

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

Module: VIDEO GAME PROGRAMMING

Subject Matter: PROGRAMMING **Type:** Compulsory

Department: Multimedia and Digital Arts

Type of learning: Classroom-based learning

Languages in which it is taught:

Lecturer/-s:

Module organization

VIDEO GAME PROGRAMMING

Subject Matter	ECTS	Subject	ECTS	Year/semester
FUNDAMENTALS OF PROGRAMMING	12,00	Arithmetic foundations of video game programming	6,00	3/1
		Programming foundations	6,00	3/1
PROGRAMMING	30,00	2D video game programming	6,00	3/2
		3D video game programming	6,00	4/1
		Artificial intelligence	6,00	4/1
		Online game programming	6,00	4/1
		Virtual reality	6,00	4/2

Recommended knowledge

To take the subjects: 3D video game programming, Artificial intelligence for video games, Online game programming and Virtual reality,
it is recommended to have passed the subjects: Programming fundamentals and Arithmetic fundamentals for video game programming.

Prerequisites

To take the subjects: 3D Video Game Programming, Artificial Intelligence for Video Games, Network Game Programming and Virtual Reality, it is recommended to have passed the subjects of: Programming Fundamentals and Arithmetic Fundamentals for Video Game Programming

Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

R1	To adapt the necessary multimedia resources to formats suitable for the programming of two-dimensional video games.
R2	To develop basic two-dimensional videogames using specific environments and programming languages.
R3	To establish the rules of a two-dimensional videogame.
R4	To identify the technical requirements necessary for each type of videogame.
R5	To create levels and scenarios for two-dimensional video games, correctly applying the principles of structural design.
R6	To adapt the necessary multimedia resources to suitable formats for the programming of three-dimensional videogames.
R7	To develop basic three-dimensional videogames using specific environments and programming languages.
R8	To set the rules of a three-dimensional videogame.
R9	To create levels and scenarios for three-dimensional videogames, correctly applying the principles of structural design.
R10	To connect different computer equipment in a wired or wireless way for communication between videogames.
R11	To design computer algorithms that allow network communication between videogames.
R12	To solve problems and situations posed in a videogame by means of artificial intelligence languages.
R13	To develop artificial intelligence algorithms to solve problems in videogame programming.
R14	To develop basic three-dimensional videogames using environments and programming languages specific to virtual reality.

Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

SPECIFIC		Weighting			
		1	2	3	4
E19	To prepare resources analytically in two and three dimensions susceptible to be included in projects of animation and videogames.				x
E20	To develop the basic programming code necessary to the construction of a videogame.				x
E21	To elaborate the gameplay elements of the videogame (rules, levels, objectives, rewards, etc) to build interest in the user.				x
E23	To choose the most appropriate software and hardware to the development of projects of animation and videogames.				x
E24	To adapt projects of animation and videogames developed in the degree to be used in devices with different characteristics (tablets, smartphones, computers, …).				x

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
	20,00%	Written tests
	30,00%	Practical tests
	50,00%	Elaboration of projects

Observations

Single assessment
According to article 9 of the General Regulations for the Evaluation and Grading of Official Courses and Own Degrees of the UCV, the continuous assessment system is the preferred assessment system at the UCV. Art. 10 allows, however, for those students who, in a justified and accredited manner, state their inability to attend in person (or to synchronous communication activities for virtual and/or hybrid teaching modalities), their extraordinary assessment in the so-called single assessment. This single assessment must be requested within the first month of each semester from the Dean's Office of the Faculty through the Vice-Deans or Master's Directors, who are responsible for the express decision on the admission of said request from the student concerned. In this subject, single assessment is not accepted as an option to pass the subject. The reason is that continuous tutoring by the teacher and face-to-face monitoring of the practices proposed in the subject are required to obtain the learning results provided for in the teaching guide.

CLASS ATTENDANCE IN FACE-TO-FACE DEGREES

In accordance with the development guidelines of the General Regulations for the Evaluation and Qualification of Official Teachings and Own Degrees of the UCV, in face-to-face degrees, class attendance with a minimum of 80% of the sessions of each subject will be required as a requirement. to be evaluated. This means that, if a student does not attend the sessions of each subject, in a percentage greater than 20%, he/she will not be able to be evaluated, neither in the first nor in the second call, unless the person responsible for the subject, with the approval of the person responsible for degree, in view of duly justified exceptional circumstances, exempt from the minimum attendance percentage.The same criterion will be applicable for hybrid or virtual degrees in which teachers must maintain the same percentage in the requirement of “presence” in the different training activities , if any, even if these are carried out in virtual environments.

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.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

M2	Participatory master class
M4	Problem solving activities
M5	Case study and research
M6	Project-based learning

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Active listening, summaries, concept maps and/or notes organizing the information and work in small groups (Kagan structures) to process the received information. M2, M4, M5, M6	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14	20,00	0,80
Analysis of mock realities – real or simulated- that allow students to connect theory and practice, to learn based on models of reality or to reflect about processes used in the presented cases. M2, M4, M5, M6	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14	20,00	0,80
The student, individually or in a group, leads their action to the elaboration of a tangible final result (product) in which process knowledges and needed competences are incorporated. M2, M4, M5, M6	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14	20,00	0,80
TOTAL		**60,00**	**2,40**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
Autonomous work. Study, memorization, test preparation, practical abilities drilling, elaboration of works, essays, reflections, metacognitions, portfolios elaboration, … M4, M5, M6	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14	30,00	1,20
The student, individually or in a group, leads their action to the elaboration of a tangible final result (product) in which process knowledges and needed competences are incorporated. M4, M5, M6	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14	30,00	1,20
Analysis of mock realities – real or simulated- that allow students to connect theory and practice, to learn based on models of reality or to reflect about processes used in the presented cases. M4, M5, M6	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14	30,00	1,20
TOTAL		**90,00**	**3,60**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
Materia 1	• Introduction to artificial intelligence.• Search problem solving.• Knowledge representation.• Planning• Machine learning.• Specific languages ??for artificial intelligence.

Temporary organization of learning:

Block of content	Number of sessions	Hours
Materia 1	30,00	60,00

References