

**COURSE DATA****Data Subject**

Code	34827
Name	Video game development
Cycle	Grade
ECTS Credits	6.0
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. Period
1407 - Degree in Multimedia Engineering	School of Engineering	4 First term

Subject-matter

Degree	Subject-matter	Character
1407 - Degree in Multimedia Engineering	19 - Optatividad	Optional

Coordination

Name	Department
PEREZ AIXENDRI, MANUEL	240 - Computer Science

SUMMARY

The course “Advanced Programming on Graphics Cards” is a core course of the fourth year of the Multimedia Engineering Degree. The course workload is 6 ECTS and it is given in the second four-month period of the second year.

PREVIOUS KNOWLEDGE**Relationship to other subjects of the same degree**

There are no specified enrollment restrictions with other subjects of the curriculum.



Other requirements

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1405 - Degree in Multimedia Engineering

- G4 - Be able to integrate into working groups and collaborate in multidisciplinary environments and be able to communicate properly with professionals from all fields.
- I10 - e able to design and evaluate human-computer interfaces that ensure accessibility and usability of computer systems, services and applications.
- MM6 - Conceive, design, and implement projects related to multimedia products by using engineering methodologies, applying the principles of human resources management and applying economic principles.
- MM7 - Be able to apply the principles of audiovisual graphic design and communication to multimedia products.
- MM21 - Communicate effectively, both in writing and verbally, knowledge, procedures, results and ideas related to ICT and specifically to multimedia, and know their socioeconomic impact.
- MM24 - Be able to design, develop, evaluate and ensure the accessibility, ergonomics, usability and security of multimedia systems, services and applications and of the information that these manage.
- MM28 - Be able to solve problems with initiative, decision-making and creativity and to communicate and transmit the knowledge, abilities and skills of a multimedia engineer.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

This course aims to achieve the following learning outcomes:

- Know the methodologies used in game development, the steps and the process of creating and placing on the market of a game within a professional context.
- Know the stages of game development and the actors involved in a development team.
- Know the process of producing and directing video games.
- Understand the business models and publishing of video games.

To complement these outcomes, this course also aims that students acquire the following skills:

- Be able to integrate into multidisciplinary development teams taking different roles in a team.
- Personal work.



DESCRIPTION OF CONTENTS

1. Videogames' industry companies.

- Game developers
- Technology licensees
- Production
- Publishing
- Distributors

2.

The role of different professionals in a videogame.

3. History of videogames

- Starts
- Generations
- Classification of Games
- Classification of Gamers

4. Videogames Production and Direction

- Project Proposal Document
- Economic study

5. Development tools

Review of the most used tools.
Unity introduction.

6. Game development 1

- User Interfaces
- Scenarios
- Characters modeling and texturing.
- Behaviors programming.



7. Game development 2

Sound
Multiplayer scripting
Advanced techniques

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Laboratory practices	20,00	100
Classroom practices	10,00	100
Development of group work	5,00	0
Development of individual work	5,00	0
Study and independent work	10,00	0
Readings supplementary material	10,00	0
Preparation of evaluation activities	15,00	0
Preparing lectures	15,00	0
Preparation of practical classes and problem	20,00	0
Resolution of case studies	10,00	0
TOTAL	150,00	

TEACHING METHODOLOGY

Theoretical activities.

Description: The lectures will present the course contents providing a global vision, a detailed analysis of the key concepts and encouraging the student participation. The workload of this section for the students is 20% of the total of the course.

Practical activities.

Description: The practical activities complement the theoretical classes and allow the students to put into practice the contents and improve the understanding of the course concepts. They include the following types of classroom activities:

- Solving problems in class.
- Regular discussion of exercises and problems that the students have previously tried to work out.
- Laboratory sessions.
- Support tutorial sessions (individualized or in group).
- Individual evaluation of questionnaires to be done in class with the help of professors.
- The workload of this section for the students is 30% of the total of the course.



Personal work.

Description: It is the work that the student must carry out individually out of the classroom timetable. It tries to promote the autonomous work habit. Activities in this group are: monographs, guided literature search, exercises and problems as well as preparation of classes and exams. The workload of this section for the students is 50% of the total of the course.

During the course the e-learning (pizarra virtual) platform of the University of Valencia will be used to support the teaching activities. This platform allows the access to the course materials used in the classes as well as additional documents, solved problems and exercises.

EVALUATION

The evaluation of the course will be conducted by continuous assessment and level tests through number of tasks carried out during the course and the development of a video game.

The final grade will take into account:

- Successful completion of tasks. Each task will have a mark and the final grade is calculated as an average of these.
- The timely delivery of tasks is particularly encouraged, and affect the delays of the task.
- In the project the result thereof, the capacity for teamwork, effort and proper documentation will be assessed.
- The attendance on regular basis to on-campus lectures/activities will be taken into account. Active participation, attitude and punctuality during the course will also have a weight in the final grade.

The final grade for the course is calculated as an average of the diferent parts of the course (33% theory + 33% problems + 33% lab). Problems will be evaluated as an average between tasks carried out during the course (60%) and a final exam (40%). A minimum grade of 4 in each and every one of the parts is required to pass the course.

The second summons will be valued by a final exam.

In any case, the evaluation of this subject will be done in compliance with the University Regulations in this regard, approved by the Governing Council on 30th May 2017 (ACGUV 108/2017)